COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

C. E. LESHER AND R. DAWSON HALL, *Editors.*

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Self-Help Still the Best Help

SHOULD nothing else come from the unemployment conference in Washington but the assurance that the estimate of the Bureau of Labor Statistics that unemployed in this country numbered little less than six million is preposterous, the effort were well worth while. The situation is difficult enough without the shock of such an alarming report, a shock which it is considered has been sufficient to set back the Christmas trade to an extent realized by few. To get at the truth in this matter, there have been assembled in Washington for three weeks the best-informed men and women in the country and we are now advised that the actual measure of unemployment is around 4,000,000, of which no more than 1,000,000, and probably less, will be necessitous, the remainder having sufficient savings to tide them over until next spring.

The conference, however, has accomplished much more than compile a reasonably correct estimate of idleness. Instead of paralyzing the country with an unwarranted alarmist report the conference has proceeded on sound lines to organize the people for combating idleness and taking care of the needy. The biggest idea that has been put over is that not to the Federal nor the state nor the county governments should we look for relief but to each community. The remedy for unemployment is employment and the application must be local. Look not to the government at Washington but organize at home is the injunction, and to this end the Mayor of every city and hamlet is under pressure, where pressure is required, to lead his people in helping the jobless with what work there may be and with succor if need arise.

The conference has done its part and adjourned. It now remains for the people to use their good American sense and grapple in good American fashion with the problem which still lies ahead. Unemployment at bituminous coal mines has been and will continue to be one of the largest single problems for which there is no obvious solution. When there are no orders for coal there can be no work for the mine labor. Development work cannot be pushed ahead indefinitely. Some properties have already been opened up so far in advance of needs that there is danger of losing sections of the mines because of trouble with the roof.

Because such a large portion of coal-mine labor lives away from cities and towns in unorganized mine settlements caring for the necessitous may fall heavily on the coal operators during the coming winter. Where work cannot be provided it goes without saying that hunger and misery will not be permitted. It has been truly said that in a country with a surplus of food, fuel and clothing, no one should be permitted to suffer. It is plainly as much the responsibility of the coal companies to provide for whatever relief is necessary in isolated camps as it is the responsibility of city officials in organized communities. The conference in Washington defined the scope of the problem and has outlined the only way out—self-help. The conference was a success. May those on whom the country looks to carry on, bring to fruition the plans that have been so ably drawn.

Bituminous Committee Report Disappoints

WE ARE frankly disappointed in the report of the Sub-Committee on Unemployment in the Bituminous Coal Industry. All their report does is to "pass the buck" to the railroads. Assailing the assigned car appears to be the one thing on which coal operators and union labor can get together. The report, quite brief, is plainly aimed only at questions of permanent relief and refers to possible future conditions rather than the present emergency. Assigned cars are no factor in the situation this year.

The railroads, after being assailed for their past and prospective future indulgence in assigned cars, are asked to buy and store five months' supply of fuel coal, thus not only to relieve present unemployment but to protect themselves against any future trouble—a plain hint on the possibility of a suspension next spring.

The mining committee concurs in the recommendation, common to most of those reporting, that Federal funding of the railroad indebtedness be hastened. It is a striking thing that the opposition to this helping hand to the railroads is meeting its strongest and only serious opposition from labor, which stands to gain most from it.

One has but to scan a bit of history of the past few weeks to understand why the report of the Sub-Committee on Unemployment in the coal industry is sterile. One of the principal members, John Lewis, was detained at Indianapolis until the end of the second week of the conference, which accounts for much of the delay. One of the first moves when he arrived in Washington was to advance the suggestion that the best interests of the country demanded that the coal operators and miners should agree in advance to arbitrate their possible differences over wages when the present contract expires next spring, thus assuring no suspension or strike. It is understood that after some hesitancy the operators agreed, but John Lewis said he would not, for he believed he should not forfeit the right to strike.

It did not remain even for the Coal Committee to include in its report a statement of what unemployment it found in coal and why there is any. To have done so would have disclosed the differences between union and non-union fields—the non-union now working more days and producing more tons than this time last year, earning less per day but much more per week, and the union men idle, almost as if on strike.

Three-Shift Breaker Operation?

SIDNEY J. JENNINGS, vice-president of a large metal-mining, smelting and refining company and president of a coal-mining concern, at the American Institute of Mining and Metallurgical Engineers advocated the lowering of overhead at anthracite breakers by the introduction of three-shift operation. Like most matters brought up thus unannounced, it did not get the full consideration it deserved. Mr. Jennings was not dogmatic. He was willing to believe that he might have been precipitate in his decision; still it is always well to listen and to consider one's problems as they are reflected in the mind of a stranger to the industry, for Mr. Jennings, though a coal-operating official, is in charge of bituminous, not anthracite, mines.

Three-shift operation of the breaker with single-shift operation of the mine would involve the use of extremely large storage bins near the breaker. A plant that would treat 4,000 tons in an eight-hour day would need, if the preparation ran steadily at that rate for twenty-four hours, a storage of 8,000 tons, which would require a larger bin by far than that which is supplied at the Lynch mine for a tonnage expected to run between 8,000 and 16,000 per eight-hour day. This 5,000-ton bin is believed to the biggest in the United States for the storage of coal at the tipple, but it would be inadequate for a 4,000-ton breaker running on a three-shift basis if the mine supplying it ran on a single shift.

It was pointed out that with triple shifting the size of the breaker might be reduced, which is quite true. The size of the bin might likewise be reduced so as to hold possibly one-third of 8,000, or 2,700 tons. But even with such a reduction the bin would still be large and of such size as to result in much degradation of the coal and in the introduction of much machinery to reduce that degradation to its lowest limits.

The expense of a big storage bin with the necessary feeders and conveyors for its discharge and the much-needed contrivances for filling it with coal without breakage possibly would be comparable with the cost of the breaker. The expense of operation would be much increased by the intervention of this intermediate provision between mine and breaker, and it would seem that, disregarding the damage done to the coal, it would leave the operating company just where it is.

The big bin at the Lynch operation is placed at an exceptional mine. The size of the fuel produced is no object, except in cleaning the coal. The only reason for its being sized is so that the dirt in the nut coal will not be overlooked in the passage of the lumps. The coal after cleaning is dumped into a large bin without regard to size except that excessively large lumps, which might block the gates, are placed in a certain section of the bin. The fine coal is in a degree to be preferred to large, as the material is to be used for coking.

At an anthracite mine the frequent presence of crushers may induce a belief in some minds that no care is taken to maintain the coal unbroken. This is not so. The public demands a medium size. The coal must not be too large or too small. Therefore it must be treated with consideration. The medium-sized coal and the fine coal must not be degraded or broken; the larger sized coal must be broken in the manner best calculated to produce the sizes desired, which in each case is the largest size which the public can be induced to take in quantity and without price concession.

To dump the product of the mine into a large bin or onto a stock pile, as coking-coal operators and metal-mill men do, would be a most wasteful proceeding. The degradation would add considerably to the cost of operation. For these reasons it is hardly likely that breakers will ever be run night and day. The Sunday rest has been recognized as a great national need. As important perhaps is the night's rest and it is to be hoped that it never will be invaded by the triple shifting of breaker operation.

Its bad effect on the homes of the workers is not to be overlooked. With men entering and leaving the house at night and the children and others keeping the people awake during the hours of the day there is no rest or quiet day or night in most of the homes of the workers wherever the triple shift is in operation.

Where concentrators and smelters are placed a long way from the mines it is necessary to provide several days' storage in order to defend the operation against the uncertainties of railroad delivery. As has been seen, there is no objection to doing this, for the ore is not adversely affected by it, but the coal-mine conditions are different, and although the question of Mr. Jennings should be duly considered the answer does not seem likely to be in accord with the point of view that he presented.

Another proposal might be made. Both mine and breaker might be triple-shifted. In that case the tonnage of the anthracite region might be increased, if under the Gallagher law that end could be attained, which is perhaps doubtful. The operators of the anthracite region would welcome such an innovation, doubtless, no less than would the purchaser. Furthermore with triple-shift operation the mine would provide coal as fast as the breaker could handle it and pockets would be used only as today, with the idea of steadying the operation of the jigs. In fact the small pockets now used might be reduced, as there would not be then the peak load of dumping that occurs in the morning under present methods of mining.

Triple shifting was not the custom before unionization. It would be almost impossible to induce the mine workers to accept it today with the large amount of union control. To the coal operator it would appear almost childish to advocate it after years of operation without it, for night work is not favorably regarded by the mine worker. Only the cutters, scrapers and gangway men have been induced to work at night. The loader is not so accommodating; a change in methods such as this would undoubtedly find him adamant. Such a change would involve immense development if the output were raised proportionately unless indeed three shifts were worked in a single room, which with piece work would occasion much trouble, as H. G. Davis pointed out at the session. It is difficult in some localities to get two men to work together in a room. Triple shifting would group together no less than six.

If triple shifting were to be adopted without increased production, it might be possible to work a different section of the mine each shift in the day and thus remove the difficulty. The mine would be triple-shifted, but the individual chambers would work only single shift. The mine therefore would not receive the benefit of the triple shift except as to locomotive, cars and hoisting equipment. Most of the outlay would still have to be made below ground, though much would be saved on the surface.

Suggestions as to the Design of a Tipple to Suit Ordinary Market Conditions of the West*

Spaces Between Railroad Tracks Should Be Ample—Feeder Increases Capacity of Screens and Enables Them to Screen More Accurately—Loading Booms Should Be Lowered and Raised by Electric Motor

BY BENEDICT SHUBART
Denver, Colo.

TO SOME the subject of this paper may seem in a degree threadbare. If, however, I repeat what already is well known, just smile to yourself and think how much wiser you are than your neighbor, for it is amazing how many tipples are erected that violate the elementary fundamentals not only of good design but of practical operation.

Possibly a coal-screening plant is a simple installation. If so, it receives treatment similar to that accorded many other simple things. Most people treat it entirely too lightly and fail to take into consideration, not only the changes that may come with the lapse of time and the conditions that necessarily have to be met as competition changes, but even the elementary physical conditions that exist at the tipple site.

If statements here made appear excessively positive, don't blame me, but consider some of the heart-breaking experiences encountered in correcting certain omissions, trying to make a tipple do merely what it was designed to do, when the builder tied everything up in such a constricted space, that no room was left to get the results that circumstances demanded. Some of the equipment here advocated may look expensive.

Do not conclude that it cannot be afforded. Much of it the owners cannot afford to do without, and when it is considered that a tipple is put up for possibly twenty years of operation, the operator cannot justify financially the omission of any reasonable precaution not only to meet the demands of the present, but to anticipate those of the future.

WEST DEMANDS AT LEAST FIVE SIZES OF COAL

First consider a tipple screening plant, suitable for Western conditions, capable of handling approximately 2,500 tons per 8-hr. shift. The largest screened sizes must be loaded into either open or box cars, and arrangements provided for preparing and loading not less than five sizes of coal—lump, egg, nut, slack and dust or any reasonable combination of these sizes. As only the preparation of the coal is under discussion, references to the method of haulage, pit cars and means of dumping will be omitted and consideration of coal will begin after it has been deposited in the dump hopper.

The track arrangement will frequently be determined by the ground layout. The sizes and tonnage assumed can be loaded on three tracks, but four are preferable. The two outer tracks should be reserved for loading lump coal, No. 3 track for egg coal, and No. 4 track for nut, slack and dust. Where a fifth track can be provided it should be held open for run-of-mine coal only or should be kept as a place of storage where emergency coal can be run should there be any delay in the operation of the screening equipment or in changing cars.

*Article entitled "Screening and Preparing Coal at the Tipple" read before the June meeting of the Rocky Mountain Coal Mining Institute.

Track No. 1 should be used solely for loading lump coal into box cars. Track No. 2 should be used only for loading that same size of coal into open cars. This second track may or may not have above it a picking table, loading boom, or both. Where picking is necessary, a table can frequently be put between the two lump tracks, heading down track, provided with a pivoted loading boom that may be raised or lowered to feed either open or box cars. With such an arrangement coal can be loaded into box cars on both tracks Nos. 1 and 2, and in that way a large tonnage of coal can be put into box cars.

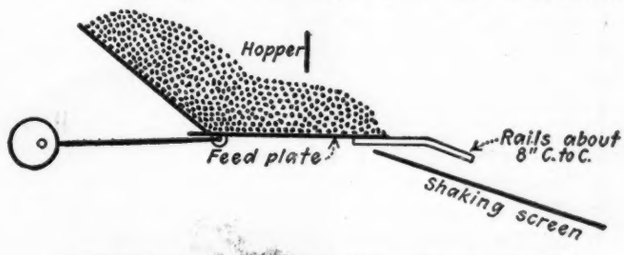
MAIN LOADING TRACKS SET AT 22-FT. CENTERS

There is a tendency to place the loading tracks too close together. Tracks Nos. 1 and 2 should be not less than 20 ft. apart center to center—22 ft. would be better still. Tracks Nos. 2 and 3 may then be placed on 16-ft. centers, except possibly where the railroad demands, as it does in some instances, that the distance be 18 ft. Tracks Nos. 3 and 4 should be not less than 18 ft. apart on centers, and if a fifth track is provided, tracks Nos. 4 and 5 may be 16 ft. apart. In other words, between each pair of tracks sufficient space should be provided to accommodate either a picking table, elevator, or such other apparatus the addition of which may be desired as conditions change inside or outside the mine.

At the point where the coal begins its journey through the tipple a feeder must be installed to feed the coal onto the screens. Not only will such a device increase the capacity of the latter from 50 to 100 per cent, but it will better the quality of the product by giving the screens a better chance to perform their work.

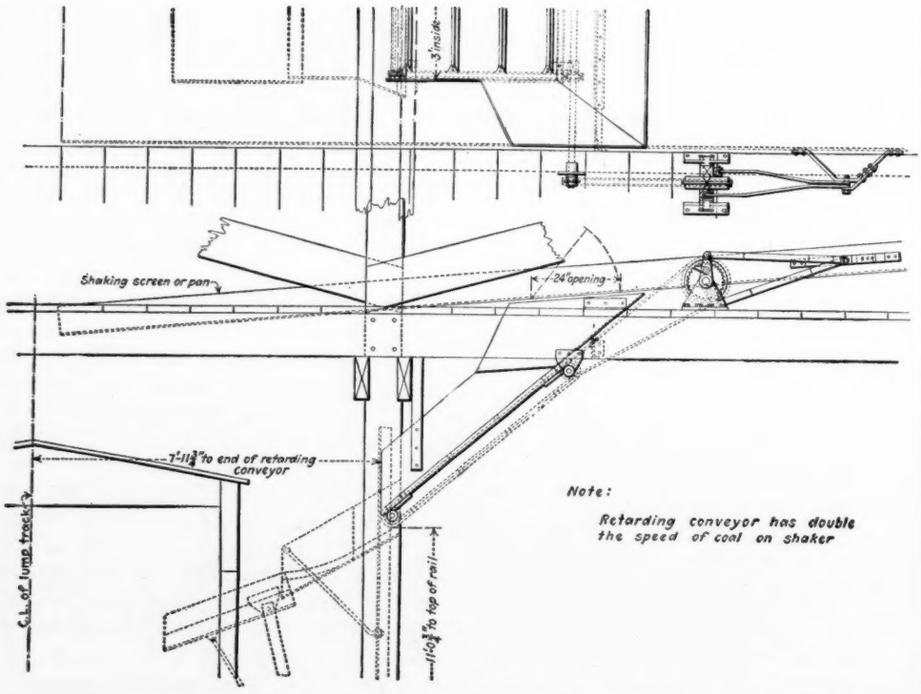
Two general types of feeders are in use—the flat reciprocating plate and the steel-apron conveyor. Either is good. For a mine of large output, the apron-feeder conveyor is preferable as it has unlimited capacity. It also possesses the advantage of rolling the coal over as it delivers it to the screens, permitting the smaller sizes to fall underneath and jarring loose such small pieces as tend to hang to the larger lumps.

For an operation of the capacity we are considering,



HORIZONTAL RECIPROCATING FEEDER PLATE

By use of a feeder the coal is delivered to the screens in accord with their capacity and not at the uncertain rate which the dumping of the coal provides. The fingers at the end of the plate roll the coal over and prevent fine coal from riding safely over the holes in the screen perched on the back of some large lump.


3' inside
Shaking screen or pan
24" opening
7'-11½" to end of retarding conveyor
Note:
Retarding conveyor has double the speed of coal on shaker
C.L. of lump track
11'0½" to top of rail

Retarding Conveyor for Box Car Loader

Where the coal goes from the screens to the box-car loader direct a retarding conveyor should be used. This can be made with a perforated bottom to remove undersize and may be driven through ratchet and chain from the shaking screen as shown in the illustration.

my preference would be for the reciprocating feeder. It has less mechanism, is thoroughly reliable, and any mine mechanic can repair it if it goes wrong or improvise another in case it is entirely destroyed. This feeder should be provided with extension fingers placed on about 8-in. centers and possibly 24 in. long made of mine rails, the function of which is to turn the lump coal over and allow the material to pass down to the screen at the earliest possible moment. If the feeder is to be expected to perform its proper function the plate should not be set on an inclination but horizontally. When inclined such a feeder is more apt to act as an accelerator than as a retarder.

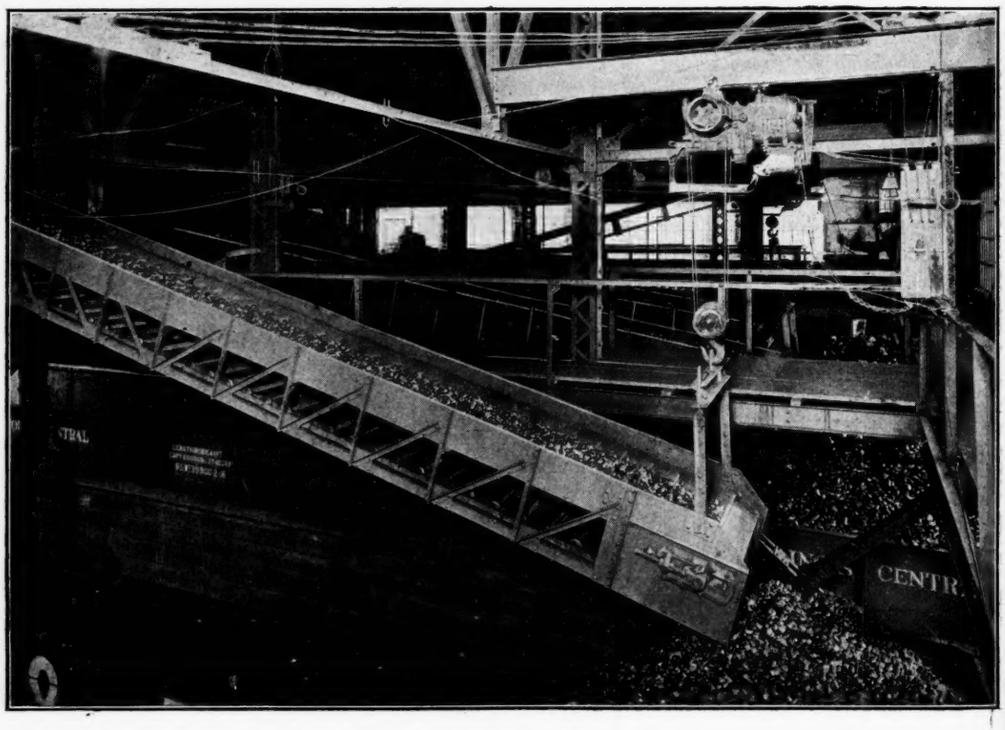
Where coal is passed direct from the screen into a box-car loader, a retarding chute should be interposed. This can be provided with a perforated bottom so that the coal delivered to the box-car loader will be free from undersize.

Pivoted loading booms are frequently installed with a hand winch for raising and lowering. This is a mistake. Men simply will not take the time nor exert the effort necessary to properly adjust such a boom. Small electric hoists are made especially for this purpose. They are inexpensive, quick in action, and even more dependable than the hand winch.

For the main screen, a width of 6 to 8 ft., and a length of 12 to 16 ft. will complete the segregation of the larger coals, leaving the nut, slack and dust to go to the rescreening plant. An attempt should be made to keep the screening section as wide and as short as possible.

Pivoted Boom and Electric Hoist

A loading boom that is not lowered into the railroad car is a mere waste of money. Most men have the loading booms up so high that they will not have to be adjusted as the car fills. The tipple man does not want to expend the labor necessary to raise the boom, but with an electric motor to do the work he is quite willing to make the adjustment, and the coal accordingly is saved the drop. It fully exemplifies the dictum that if you want anything to be done don't do it yourself but have a machine by which it can be done without labor.



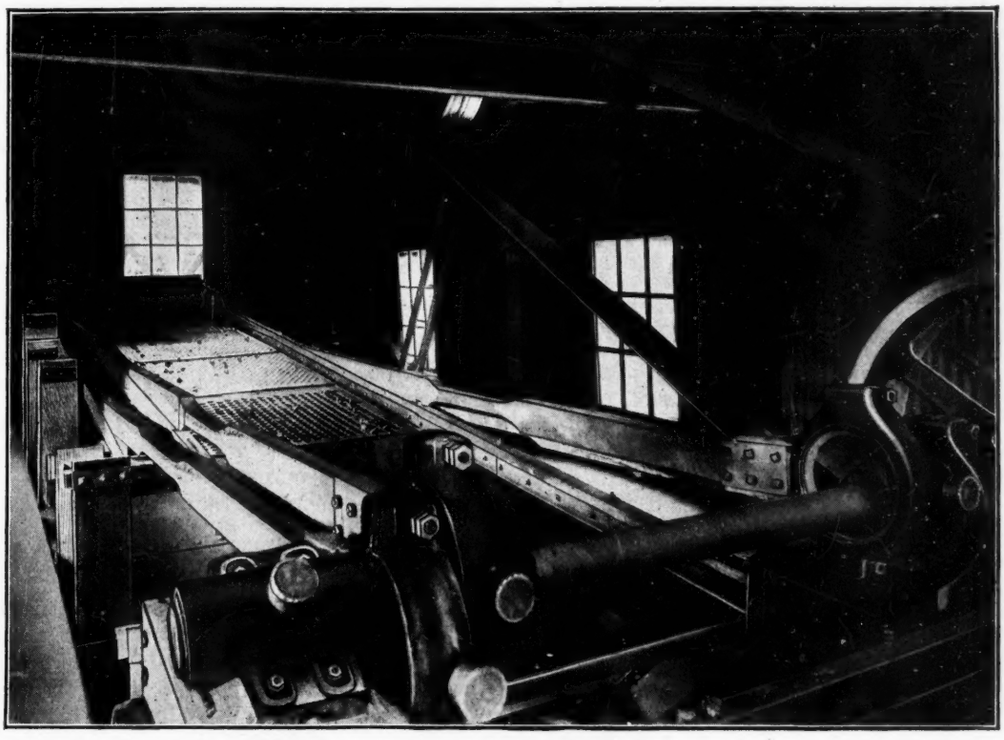
This lessens degradation. So far no screen has been designed that in point of simplicity and efficiency will equal the common type of inclined shaker. From the standpoint of economy, it has the advantage of getting the coal over the perforations with little abrasion, and inasmuch as the larger sizes constitute the high-priced coal, a difference of one or two per cent in the amount that may be lost to the smaller sizes is no inconsiderable item.

Screens are frequently set at pitches as high as 16 deg. My preference is for approximately 13 deg. with a rather rapid motion of the driving shaft, such as 100 to 120 r.p.m. This requires better machinery and a stiffer structure than the steeper-pitched slower-moving shakers, but it prepares the coal more scrupulously.

There appears to be no satisfactory method of eliminating the waste from Western coals, except by picking.

Flexible Screens

Note that the eccentric arms are of wood and that the supports for the screens also are of wood, giving maximum flexibility and absence of jar. Screens tend to break the coal. Pieces nearly small enough to go through stick in the perforations and are held there till the hammering of other pieces which themselves are abraded causes the coal caught in the screen to break up and go through. For this reason screens should be just long enough to do their work and no longer.



Under certain conditions washing the smaller sizes has proven exceedingly efficient. It gives a beautiful product, and is a simple process where sufficient water is available. These conditions are so infrequently found in the West, however, that it is safe to assume that picking is the only method available for treating the great bulk of the coal. A number of devices are in use for automatically cleaning the mine product, but so far none has been found practical under existing conditions. One mine is now preparing to spiralize its coal. Spiralizing demands the separation of the material treated into a large number of even-sized fractions. Furthermore, the coal must be even texture and substantially dry. I question the commercial success of this installation.

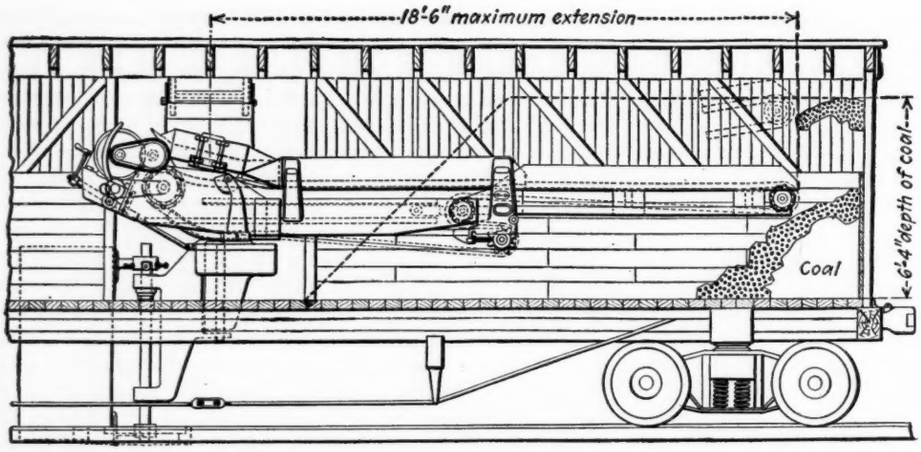
Disposal of waste is frequently a serious problem. Where any appreciable amount of this material must be removed—more than about two tons daily—it may prove economical to install conveyors to take the waste to a bin. Such a conveyor can frequently be placed under the tracks so that the waste as picked may pass to it by gravity without rehandling.

Where a comparatively large quantity of coal is to be shipped, loading can frequently be facilitated by the use of a gathering or transfer conveyor. This is a new development, and consists merely of a conveyor running parallel with the screens to mix several sizes of coal after they have been prepared, delivering them on some track that may not be working at that time. It is convenient too, at times when lump coal is being loaded into open cars, and it is desired to load egg or nut coal into box cars. In such cases, where two lump tracks are provided, one with a box-car loader, the smaller coal can be transferred to the track equipped with the loader.

With some coals and when serving some markets, it is a good plan to use a section of perforated plate or a lip screen just before delivery is made to the car so as to remove the last trace of small material. These lip screenings are permitted to fall to the ground to be cleaned up later, but where their quantity is great and a rescreening plant is installed, a simple conveyor can usually be arranged to take this material to the rescreened coal elevator or to a conveyor that will deliver it to the fine screen.

Nut and Smaller Should Be Rescreened

Now let us take up the second unit of the plant, the rescreening equipment. In my opinion, for the quantity of coal under consideration, there is actual economy in treating all sizes of nut and smaller in the rescreening plant. The installation of such an equipment may appear like a heavy additional expense, but when consideration is given to the material it replaces, the extra outlay is not great. First, the rescreens themselves merely replace similar pieces of equipment that are omitted from the main structure. The additional expense involved is really that necessary for the elevator and the bins. Offsetting this is the possibility of omitting one or two loading tracks. For in a properly arranged tipple, three of the small sizes, nut, slack and dust, can be loaded on the same track without delay in



Extensible Box-Car Loader

This loader has an extension conveyor that can be used when the loading of the car begins. The drawing shows near the roof of the car the level to which the loader can be tilted so as to fill the car almost to the roofing boards. When the extension is withdrawn the coal can be loaded at the center of the car.

operation, while this same track may be utilized for loading coal direct from the screens.

Coal to be rescreened can be lifted either by an elevator or a belt conveyor. If the bins are to be placed close to the tipple (in which case they should be as close as possible) a vertical elevator should be employed, preferably of the continuous bucket type carried on double strands of heavy-bar link chain. This should have not less than 50 per cent over-capacity, and should run slowly—say at a maximum speed of 70 ft. per min. A well-designed elevator can be relied on to give absolutely no trouble.

Rescreens Should Be Remote from Tipple

For several reasons, it is preferable to place the rescreen bins at some distance from the main tipple structure. Not only will this diminish the fire risk, but it facilitates the placing and loading of cars. In such a case, a belt conveyor should be used for elevating the coal. The bins should be built preferably not less than 120 ft. from the center line of the tipple structure. A distance shorter than this will not permit the proper handling, spacing, and loading of the cars.

Each bin must have a capacity of not less than one and one-half to two cars of its particular size of coal. They may be arranged also so as to load railroad cars either from the bin side or from its bottom, or both. It is preferable to draw the coal from the bottom, so that open cars may be loaded rapidly. Where, upon occasion, nut coal must be put into box cars, it is well to place the box-car loading arrangement at the side of the bins. Where this is done a box car can be spotted at the bin, loaded quickly and run out of the way of any other cars that may be loading other sizes of coal on the same track.

Bin Best Filled by Spiral or Telegraph

Nut coal discharged from the screens should be deposited in the bin by means of a spiral or telegraph chute so as to avoid breakage. Here again, where coal is friable, the loading chute should be fitted with a perforated bottom.

Rescreening screens are limited to two types. The first is the rotary or revolving screen which gives excellent results under many conditions but has a tendency to break down the material handled and increase the amount of small sizes, causing a decrease in selling value. The second is the flexible-hanger type of screen. This is simply a flat shaker screen peculiarly supported and provided with a light flexible ash or hickory frame. It is actuated by the usual eccentrics, but at a somewhat higher speed than the common shaker. The hangers, and eccentric rods are so connected to the flexible frame that they give a peculiar creeping motion to the coal, rolling it over and over, handling it gently, yet securing a complete screening effect.

Shaker Screen Spreads Coal Over Wider Area

This type of screen is apt to yield better results with damp coal than does the rotary screen although either is satisfactory in this respect. The shaker screen has the advantage of distributing the coal over a wider expanse of bin area and is apt to be somewhat lower in installation cost than the revolving type. I am inclined to believe, however, that the upkeep will be slightly greater, although this may be offset by the better preparation secured.

A number of "freak" screens have been designed, some of which do good work. So far, however, none of them has equalled the simplicity or the general efficiency of the devices here described.

Gravity in Tipple Most Expensive of Means

Screened sizes cannot be moved satisfactorily by gravity. This force is entirely too uncertain, dependent upon the weather, the condition of the mine, the condition of the coal, and on a dozen and one other things, making its effect decidedly undependable. A chute that at times permits coal to go down like a mill race, at others will clog up and require the attendance of several men to keep the material moving. Coal should be moved mechanically, not dropped or slid. And in designing a tipple it should be borne in mind that there is no advantage in making a good preparation, and then permitting the coal to be broken just before or when it is being loaded into cars for shipment.

An Elementary Treatise on Coal Mining Physics and Chemistry.—J. W. Whitaker, certified colliery manager and lecturer in the mining department, University College, Nottingham, England, has set down in 268 pages what he believes the coal-mining man should know about physics and chemistry. What he has written, Longmans Green & Co., Fourth Ave. and Thirtieth Street, New York City, has published and it makes quite a readable and valuable book. Those who want an elaborate treatise may be warned that this book starts at the beginning and gives the full range of necessary subjects in less than 250 pages. It gives them, however, succinctly and well, making the book quite valuable to the rank and file of mining men. It measures 5 x 7 ½ in.

Gas Mask, Developed by Bureau of Mines, Absorbs Carbon Monoxide from Inspired Air

Oxides of Manganese and Copper in Grains About Size of Rice Absorb Carbon Monoxide—Useless Where Oxygen Is Deficient—Subordinate Use in Rescue Work—Possible Protection in Mine Disasters

By Guy H. Burrell*

HOPCALITE, the new absorbent of carbon monoxide, is named from Johns Hopkins University and the University of California, where the scientists who developed the material carried on their work. Although carbon monoxide is high in the list of poisonous gases it was not used as a war gas because it dissipates rapidly in the open air and is difficult to produce in lethal quantities under battle conditions. The weight per unit volume of carbon monoxide is so close to that of air that, when a quantity of carbon monoxide is released in the open, diffusion is extremely rapid and the percentage of carbon monoxide present quickly falls to a harmless point. In low percentages of the gas, exposures must be over a period of some time to be effective, and it is only in confined or semi-confined places that higher percentages are apt to be encountered. For this reason the regular troops had no need for carbon-monoxide protection.

However, early in the war much difficulty was experienced in the closed gun turrets of our men-of-war when the guns were in heavy action. Carbon monoxide from the burning powder accumulated rapidly at times in these places, and the men operating the guns were apt to be severely affected. No relief was at hand, as the only protection available was in the form of oxygen breathing apparatus.

Sought for Use of Men in Gun Turrets

Inasmuch as the efficiency of the gunners was dependent on the rapidity of their movements it was entirely impracticable to equip them with oxygen breathing apparatus and an appeal was sent to the U. S. Bureau of Mines, then conducting all research into the questions of poison gases and protection therefrom, for a lightweight apparatus, preferably built along the lines of the army gas mask, which would protect the gunners effectively from carbon monoxide.

The big advantage of the regular army gas mask, of course, was its light weight. The problem resolved itself into finding a substance to use inside the canister which would destroy or absorb carbon monoxide. With the oxygen breathing apparatus the wearer is entirely independent of the outside air. He gets the necessary amount of oxygen to sustain life from the oxygen bottle which is a part of the apparatus. On the other hand, with the gas mask the oxygen is obtained from the atmosphere in which the wearer works.

Upon inhalation air is pulled through the canister, the poisonous, obnoxious gases being absorbed, leaving nothing but the pure air to pass through into the face piece and into the lungs of the wearer. It was much easier to find suitable absorbing materials for the ordinary war gases than to find a material suitable for use in a gas-mask canister which would absorb, or otherwise destroy, carbon monoxide. The few substances which would absorb that gas were entirely unsuitable for use in a canister and at best were inefficient.

The research work on war gases and gas masks carried on by the U. S. Bureau of Mines under my direction was divided into sections. A group of scientists in each section worked upon one or two problems. When an important and apparently difficult problem came before the bureau, a group of scientists who had specialized on work of a cognate character were selected. They devoted their entire time to finding a solution.

The scientists to whom fell the task of finding an absorbent for carbon monoxide were Dr. A. B. Lamb, Harvard University; Professor J. C. W. Frazer, Johns Hopkins University; Dr. C. C. Scalione, University of California, and their assistants. After over two years' research, gas masks were produced for use in the navy which would give protection against carbon monoxide.

Hopcalite is a mixture of oxides of manganese and copper. It is brown in appearance and, in the form

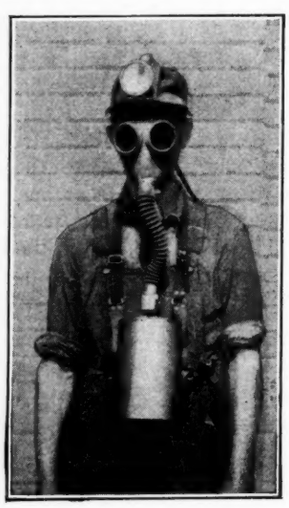
DETAILS OF CARBON-MONOXIDE GAS MASK

For many purposes this mask will replace oxygen-breathing apparatus, compared with which it is light and compact. As the oxygen by which the wearer breathes must be supplied by the air the mask is not fitted for work in atmospheres having any marked oxygen deficiency.

*Mine Safety Appliance Co.

in which it is used, consists of hard granules about the size of rice. Physically it is thoroughly suited to gas-mask canisters as in use it retains its form and does not give off any noxious vapors or fumes. After the war the U. S. Bureau of Mines continued its researches into the industrial uses and limitations of carbon-monoxide gas masks. Though the Bureau of Mines has not yet published any of the results of its work, certain data have been obtained from other sources which indicate the possibilities of carbon-monoxide gas masks around blast furnaces, as well as in mining.

For example, at a recent mine fire in the Pittsburgh district, carbon-monoxide masks were used to supplement oxygen breathing apparatus. In this particular case all exploring was done with oxygen breathing apparatus. In several cases, however, it was necessary to put up stoppings in a smoky, gaseous atmosphere where unprotected men would have been greatly handicapped. The problem was simplified by the use of gas masks, which protected their wearers against carbon monoxide and smoke. Inasmuch as the masks are light in weight and give full protection, the work was carried on with much greater speed and comfort than if oxygen breathing apparatus had been used exclusively or if the men had been required to work in short shifts unprotected. Under such conditions the gas mask can be used wherever a safety lamp will burn, indicating sufficient oxygen in the atmosphere to sustain life.



MASK IN POSITION

The mask is used as subsidiary to oxygen breathing apparatus in mine-rescue work.

The carbon-monoxide mask will be useful to shotfirers, who are frequently subjected to carbon monoxide from burning powder. A mask of this character will give them full protection both from carbon monoxide and from the fumes which the blasts create. Looking farther into the future it appears likely that a self-rescue mask will be perfected. This will take the form of a small pocket-size canister fitted directly to the mouth, which would give twenty to thirty minutes' protection to men caught by fires or explosions underground. Unless the atmosphere were depleted of oxygen, which is not usually the case, the men when equipped with pocket self-rescue masks would have twenty to thirty minutes' time to work their way out, and it is the experience of the coal-mining industry that in this time a man under stress of circumstance can travel a considerable distance.

The problem of giving protection to all the many men engaged in fire fighting underground has always been acute. Men equipped with oxygen breathing apparatus are called upon to do the initial exploring work and to chart conditions of the atmosphere in the mine where the work is to be done and to keep ahead of the working force. Notwithstanding all the precautions that are taken to get definite knowledge of the character of the mine atmosphere, some men are almost sure to be exposed to bad air, and if they are not protected they are liable to be adversely affected.

The carbon-monoxide mask will be of greatest value in supplementing the work of oxygen breathing apparatus crews. It can be used, as it were, to protect the secondary operations, after the oxygen breathing apparatus men have determined the conditions that must be met.

With the achievements of the Bureau of Mines and the men above mentioned as a basis, the Mine Safety Appliances Co., of Pittsburgh, Pa., has been making a parallel investigation into the fundamentals of the carbon-monoxide mask, but on a commercial plane. The refinements realized have permitted placing it upon the market as a practical safety apparatus, which will be a great boon to the mining industry and also to other industries and employments where dangerous gases are encountered.

How a Manager Saved Gathering Expenses

IN PARTS of Kentucky each man insists on a room to himself, so that what he mines and loads is his and does not have to be divided with another man who may not be as diligent at his work as is his fellow. This is a great annoyance to a mine manager, for he has to provide twice as many places, and each place involves more development, superintendence, ventilation, wiring for the heading, rail and so forth.

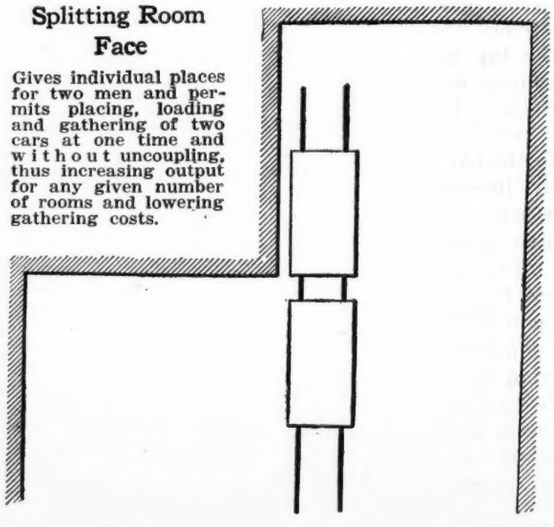
Confronted with this difficulty, R. A. Walter evolved a scheme for the coal operations of the Wisconsin Steel Co. in which the face of each room was stepped the length of a car at the central line of the room. The cutters readily moved the machine back to the face of the step and found cutting easy there, as there was no need to sump owing to the loose end.

Two men were willing to work in the room together, for each man had a place of his own—one took the left face, the other the right. The coal of one man went into one car, the coal of the other man into another car. The advantage was that as one face was a car length ahead of the other, two cars could be put in at one time and could be loaded promptly and without uncoupling.

As a result the gathering cost was halved and development was reduced, as well as the other charges enumerated above. The men were well pleased with the change, for they had the advantage of each other's company without merging one another's earnings. The cutters also found that it added but little to the work to move back one step in the course of the cut.

Splitting Room Face

Gives individual places for two men and permits placing, loading and gathering of two cars at one time and without uncoupling, thus increasing output for any given number of rooms and lowering gathering costs.



Why Not Save Timber Above and Below Ground by Use of Creosote Oil?

ALL OPERATORS have a number of surface structures which would be made vastly more durable by use of a liquid creosote oil such as Carbosota, which once applied arrests decay even more completely than paint, for the latter is merely a surface application which loses its value as soon as it cracks or peels off. Plank and boards impregnated by creosote oil do not need painting; in fact cannot be painted successfully. Fence posts of durable woods such as cedar or chestnut, which resist decay when dry, need treatment only from the base to a point about 6 in. above the ground. The best way to treat them is to immerse the butts in a bath of oil at 175 to 200 deg. F. for four to six hours. The oil is allowed to cool to a minimum temperature of 50 deg. F. for from six to eight hours. The temperature during this second process should not exceed 100 deg. F.

The non-durable species, such as ash, basswood, butternut, beech, birch, cottonwood, elm, sap or second-growth cypress, gum, hickory, red oak, maple, sap yellow pine, Western pines, sycamores, willows and like woods should be treated for their entire length but not so thoroughly as at the butt end. Of course, the bark must first be peeled, as indeed it should be whether the timber is treated or not. With the material removed should be included the fine inner skin of bark that sometimes adheres after peeling. Such posts should have their butt ends immersed in the creosote oil for about an hour, after which the whole piece should be immersed in the liquid for thirty minutes.

May Be Creosoted by All Three Methods

Mule barns and wooden sheds or such portions of them as are not to be coated with paint, should be covered with creosote either by dipping, spraying or brushing, the first being preferred as more thorough. Spraying is better than brushing, as the penetration is greater. When sap pine, cottonwood, ash, beech and birch are treated the cost of the wood per year of service—and that is the right method of calculating cost—is cheaper by 50 per cent, and the woods will have an annual cost 20 per cent lower than that of untreated cedar. All timbers and planks should be treated. Wagon bottoms and bridge plank should also have their natural life extended in that manner.

Before it is treated, however, the wood should be seasoned so as to give the liquid an opportunity to enter the fibers. The natural moisture of unseasoned wood resists the entry of the protective fluid. In brushing with oil it is difficult to get the liquid to enter cracks and joints. With a spray this desired end can be better achieved. Where wood is in contact with the ground or with concrete, brick, masonry or other wood, it is likely to decay and a preservative is more needed at this point than at any other. A place needing particular attention is in the mortise-and-tenon joint so frequently used in framing.

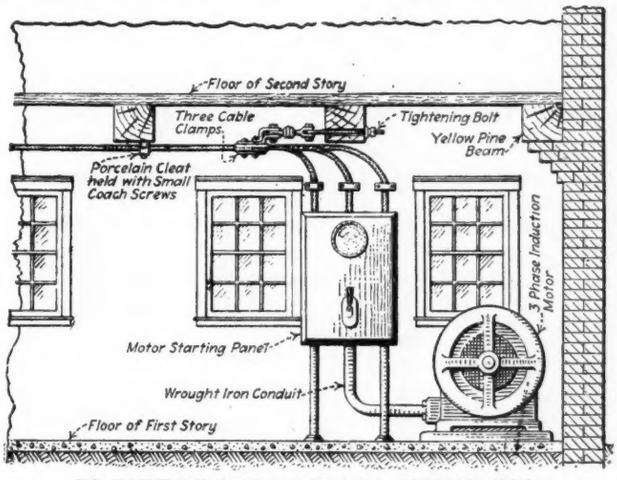
With the top-coat brush treatment a gallon will protect 100 sq.ft. of surface; with two-coat spraying 50 per cent more fluid will be required, and with dipping, for from five to fifteen minutes, one to one and a half gallons will be needed for the same surface area. The creosote oil when applied by brushing or spraying should be heated to about 150 deg., and with dipping, as has been stated in regard to fence posts, the temperature should be between 175 and 200 deg. F. Carbosota, which flows freely at 41 deg. F., should not be applied unheated unless the atmospheric temperature is above 60 deg. F.

Underground, the germs to be counteracted are of a different character from those on the surface, but the treatment is just as much needed. In view of the fact that decay is promoted by the presence of much timber and that the germs are readily carried by the air current, the need is greater. In fact the cost of timber renewal is not measured alone by the timber, the framing and the actual labor involved but also by the work of removing loose rock, timbering unnecessary falls and the hampering conditions under which the replacement must be performed during the operation of the mine or around pumps and cages which must often be kept going when the mine itself is idle.

How Large Insulated Conductors May Best Be Dead-Ended on Floor Timbers*

By Roy J. Turner
St. Louis, Mo.

A CONVENIENT and economical method of dead-ending large conductors, covered with heat-resisting or slow-burning insulation, to wooden beams is shown in the accompanying illustration. In this instance the timbers are the floor beams of a frame building and are directly above a motor switchboard.



TO TAKE UP STRAIN OF BIG CONDUCTORS

The conductors are attached by cable clamps to two Z-shaped irons which are themselves bolted to a rod which passes through floor beam of the second story. A strain insulator in the line prevents the wire grounding to the floor timbers.

The same method could, however, be applied with equal efficacy in other locations.

Cable clamps of the type here shown in combination with an eye-bolt provide a means whereby the conductors may be drawn taut and held firmly. Their application renders unnecessary any "making up" of the heavy conductors. It should be noted that no copper is wasted in making such a termination.

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Bradstreet's Index Number Advanced 0.9 Per Cent Between Sept. 1 and Oct. 1.—An increase of 0.9 per cent was noted in Bradstreet's index number as of Oct. 1, compared with the level of the previous month. On the first of the current month the number was 11.1879. On Sept. 1 it stood at 11.0868. Seven groups of commodities advanced during September, these including fruits, textiles, metals, coal and coke, naval stores, building materials and miscellaneous products, while six, breadstuffs, live stock, provisions, hides and leather, oil and chemicals and drugs, went lower.

Danger of Opening Black Blasting Powder Kegs with Wooden Tools*

Remove the Slide Which Covers the Bunghole—Do Not Seek to Make a New Hole—Eighteen Men Killed by Neglect of This Rule

By S. P. Howell†

THE Bureau of Mines has repeatedly called attention to dangerous practices in the transportation and opening of kegs of black blasting powder. In 1914 Edwin Higgins ("Prevention of Accidents from Explosives in Metal Mines," Miners' Circular 19, Bureau of Mines, p. 15) stated "canisters should always be opened by removing the bung. To use a pick or other sharp tool for cutting a hole in the canister is dangerous. After the necessary amount of powder has been taken out, the canister should be kept closed. The powder should always be handled at a safe distance from an open light."

In 1919 George S. Rice (Monthly Statement of Coal Mine Fatalities for June, 1919, Bureau of Mines, pp. 16 to 18) called attention to the dangers that arise in underground transportation and handling of explosives, and called special attention to the danger of hauling explosives in motor trips; the unnecessary risk involved in hauling men on the trip at the same time, and the necessity of keeping open lights away from black blasting powder.

In 1919 the writer ("Sensitiveness of Explosives to Frictional Impact," Technical Paper 234, Bureau of Mines, pp. 12, 15) called attention to the fact that black blasting powder is not as sensitive to frictional impact as the nitroglycerin dynamites and the gelatin dynamites, but black powder may be ignited by direct impact and without the presence of any preliminary spark. It is well known, however, that black blasting powder is very sensitive to ignition by spark flame or heated materials, and these may be produced by an electric current, by an open light, by incandescent particles from a pipe, cigar, or cigarette; by tearing of metal sheets or scraping of metal against metal, and possibly by other means.

Three Accidents Prove That Danger Exists

The above discussion will serve to introduce a newly-recognized hazard—the ignition of black blasting powder by the forcible opening of kegs with wooden tools. The details of three accidents in which kegs of black blasting powder exploded instantly when a wooden tool was driven forcibly through the top of the kegs are as follows:

(1) In 1915 a powder man employed by a coal-mining company stated that he was opening a 25-lb. keg of black blasting powder by driving a hole in the top with a wooden sprag when the powder in the keg he was opening ignited. This caused the ignition of fifty-two additional 25-lb. kegs of the powder, and the fatal burning of this and another powder man. The man making this statement lived five hours after the explosion.

(2) In 1917 an explosion of forty-one kegs of FFF black blasting powder occurred on the track bench of a cement quarry. This explosion occurred the instant that the workman, who was opening the keg with a wooden moil (made from a pick handle), had driven it through the keg with a machinist's hammer. The workman who was opening the kegs lived long enough to state that when he hit the moil with the hammer, "Puff! everything went up." This explosion caused the death of eight men.

(3) In 1920 a powder magazine containing over twenty 25-lb. kegs of black blasting powder exploded, killing eight men, six of whom lived for several hours after the explosion. This magazine was used as a station for distributing explosives to the miners, and this fact accounts for most of the fatalities.

The verdict rendered by the coroner's jury was that when striking a keg of powder with a mallet it caused a spark which ignited the powder. It was customary to open the kegs with a wooden mallet and wooden pins, and these were found after the explosion.

Difficult to Explain How Ignition Occurs

It has not been definitely established just how opening a keg with a wooden spike, wooden sprag, or a wooden mallet causes explosions, as it appears to be very difficult to strike a spark with wood against metal, but it may be that in breaking the keg, the sharp points of the sheet iron would be driven inside of the keg; that two or more of these points may have been made; and that in rubbing over one another, these points or the edges of the strips may have caused a spark, or it may be that the strips or points may have been driven forcibly against the side of the keg and produced sparks, or it may be that the wooden tool was covered with a gritty substance, thus facilitating sparking, or it may be, and the possibility of this has been demonstrated at the explosives experiment station of the Bureau of Mines, that the fine particles of black blasting powder remaining in the angular groove of the chime, or rim, of the keg received the impact from the wooden tool and this impact ignited the particles.

Regardless, however, of just how a spark may be produced, the evidence presented above clearly condemns the opening of kegs of black blasting powder with wooden tools by punching a hole through the top of the keg. The usual 25-lb. black blasting powder kegs are provided with a bunghole and a cap for closing it, and in all cases the powder should be poured from the keg through this bunghole.

The excuses for not doing so are usually that the bunghole is so small (diameter, 1⅞ in.) that too much time is consumed in getting the powder out of the keg through this bunghole, or that the bunghole is so far from the chime (1½ in.) that all the powder cannot be poured out of the keg.

In view of the danger of using other methods of opening the kegs, these excuses cannot be given serious consideration. A keg of FFF black blasting powder can be emptied through the bunghole in 40 to 50 seconds, leaving less than 100 grams (about 3½ oz.) of explosive in the keg, and it is not difficult to get all but half an ounce of the powder out of a keg by shaking.

Eighteen men were killed by the three accidents just recounted, and the fatality rate was high either because the magazine was used for a distributing station or because too many men were in the danger zone or both.

The Bureau of Mines therefore recommends that kegs of black blasting powder be not opened with any tool, whether of metal or wood, and that the keg be emptied only through the bunghole provided for that purpose.

*Article published as part of "Reports of Investigations of U. S. Bureau of Mines," and entitled "The Menace of Opening Kegs of Black Blasting Powder with Wooden Tools."

†Explosives engineer, U. S. Bureau of Mines, Washington, D. C.

Coal-Loading Shovel with Jaws That Close Horizontally Will Build Packwalls

THE machine shown in the accompanying illustration, for which a patent has been granted, but which has so far not been constructed, is an attempt to utilize the general principles of steam-shovel construction, power and reliability to use underground. It is a radical departure, however, from ordinary steam-shovel construction in that the scoop or dipper is built in halves that open and close with a horizontal instead of a vertical movement. This enables the work of digging to be performed in places restricted as to height. The shovels themselves may be made quite flat so as to require no more space above the car than is necessary for hand loading.

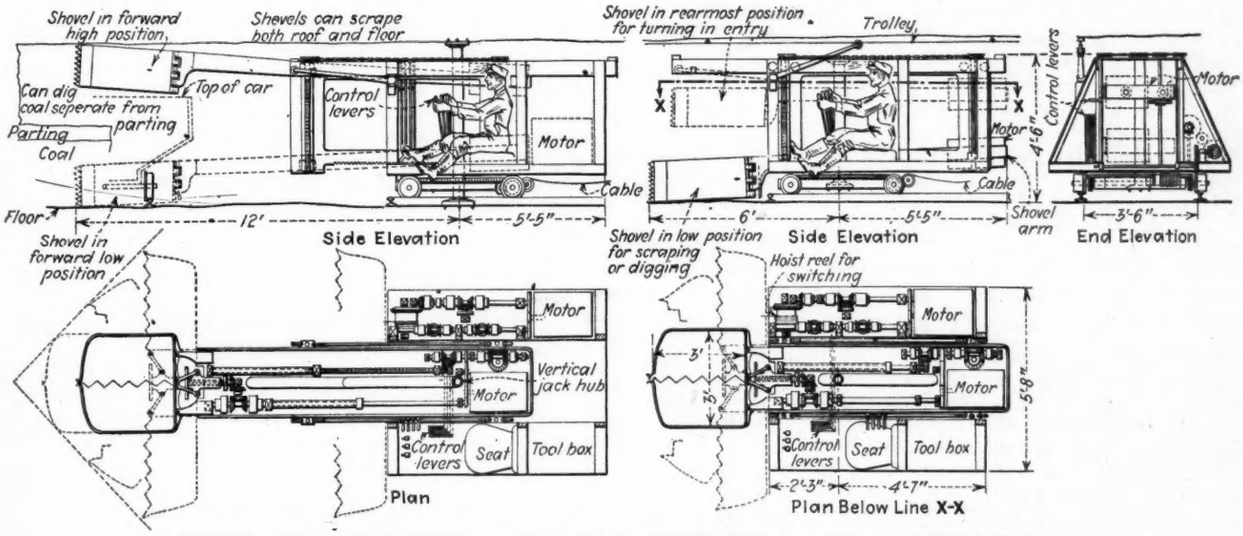
Essentially this machine will consist of a low truck provided with a revolving platform upon which the shovel arm will be mounted. The arrangement will be such that this arm can be moved both vertically and horizontally. The shovel proper is designed to be built in halves each of which is pivoted so as to swing horizontally from a point near its rear inner corner. In action these halves open and close like two jaws. They are provided with tusk or extension teeth at their forward edges while their bottoms are serrated or saw toothed. The inventor, who has had experience in steam-shovel work, feels assured that they can be made to bite coal out of the solid or scrape it clean from the floor.

For this consummation the machine, being comparatively light in construction, must be anchored firmly in place; otherwise it would not be able to exert sufficient force on the coal. In other words, the weight of the machine alone would be insufficient to hold it to its work and other means to accomplish this end would have to be provided. Accordingly a heavy jack will be mounted in the center of the revolving table. When this is set up in place the whole upper mechanism of the shovel will revolve about it as a pivot, the jack furnishing ample support for all operations of the machine. Great force may thus be exerted by the shovel when in operation.

Either electric current or compressed air will be used to actuate this machine. In either case one motor mounted on the main platform will provide power for swinging the machine, for self-propulsion from place to place, for longitudinal movement of the shovel-arm cage and also for a cable reel whereby cars may be moved in case no locomotive is available for this purpose. A second motor will open and close the shovel jaws and raise, lower and extend the shovel arm. All operations of the machine will be controlled by levers or push buttons within easy reach of the operator when seated.

In operation the inventor expects to open the shovel jaws, crowd them against the coal and then close them. Where excessively hard material or large lumps are encountered the jaws will be repeatedly opened and closed quickly or snapped, thus forcing the teeth through material otherwise impenetrable. In discharging after being opened the jaws will be given a quick jerk, thus jarring their contents loose. With jaws closed the shovel will be used as a ram for pushing cars or for moving back the topping thereon. Packwalls also will be built up by this machine, it being first used to shovel the pack material into place, after which it may be firmly tamped against the roof by using the shovel when closed as a ram. As this machine is full-revolving, it will be able to load cars upon either its own or a parallel track, thus tending to obviate the greatest difficulty that hitherto has beset mechanical loading, namely, keeping cars to the machine. The machine was invented by S. C. Corrigan, a civil engineer of New York City.

ONE HUNDRED AND EIGHTY-TWO FEET OF COAL.—The Oliphant-Munson mine in Alberta, Canada, is one of the most remarkable mines in the world. The main excavations have been along the outcrop, said George Sheppard, in an address befor the Institution of Mining Engineers, Stoke-on-Trent, Sept. 14, and despite long continued operations in this area there are still many millions of tons of good grade coal in sight. Two complementary seams (originally forming the flanks of a small anticlinal fold) have been faulted together at the apex, thus producing a workable deposit 182 ft. thick. The daily output is 1,000 tons.



DESIGN FOR A HORIZONTAL OPERATING STEAM SHOVEL FOR LOADING COAL

The dipper stick of the shovel is not planed to dip but goes forward horizontally. The bucket is to open horizontally, and when closed to be used as a ram to drive rock packing into place, should longwall advancing be the method of mining. The shovel is to be provided with upward and downward play so that it can scrape roof and floor. A heavy jack at the center of the shovel structure will hold the machine in place

Two Thousand Five Hundred Members Attend Sessions Of National Safety Council's Congress in Boston

Haulage Costs in Metal Mining Greatly Exceed Those in Coal Mining—Large Car vs. Small—Blasting in Hillside to Extinguish Mine Fire—What Deprivation of Oxygen Will Extinguish Fires in Mines?

BY F. H. KNEELAND*

UNPRECEDENTEDLY successful was the Tenth Annual Safety Congress of the National Safety Council, held in the Boston State House, Sept. 26 to 30. About 2,500 persons attended. The whole of New England exhibited the keenest interest. Boston opened the State House to this convention, breaking thereby a long-established precedent, for never before has the building been so used, and New England declared a Safety Week in honor of the occasion.

Beyond a statement that Arthur Young was elected president of the Council for the coming year, no further reference will be made to the business of the general sessions, the interest of the readers of *Coal Age* centering in the mining section, which began its meeting on Tuesday morning with B. F. Tillson presiding. The session was devoted to the general subject of "Underground Transport" and papers were presented on the following topics: "Storage-Battery Locomotives (in metal mines)," by E. V. Daveller, general superintendent, and R. E. Renz, chief electrician, of the Butte & Superior Mining Co., Butte, Mont.; "Trolley Locomotives," by Frederick W. Whiteside, chief engineer of the Victor-American Fuel Co., Denver, Col.; "Compressed Air Haulage," by Guy J. Johnson, safety engineer of the Homestake Mining Co., Lead, S. D.; and "Storage-Battery Locomotives (in coal mines)," by Charles E. Stuart, consulting engineer, of New York City.

WHAT IS SAFE IS USUALLY ALSO EFFICIENT

Questions relating to the use of the storage-battery locomotive evoked animated discussion. In presenting the subject for consideration Mr. Tillson remarked: "Safety and efficiency are interrelated and in a measure interdependent. The safe way of doing anything, usually, if not always, is the efficient way."

The question was raised by Mr. Stuart why haulage cost is greater per ton-mile in metal mines than in coal mines? Several reasons were advanced to account for this fact. It was brought out that the mining methods pursued by the two sections varied widely and that the workings of metal mines not infrequently spread over comparatively large areas. Existing metal mines seldom are laid out and operated in such a manner as to permit storage-battery locomotives to work to the best advantage. Like loading machines they find the mines developed to suit another and earlier form of operation. One man stated that the average costs of transporting ore ran from 35c. to 70c. per ton-mile. Mr. Johnson said, however, that the Homestake Mining Co., operating on fifteen levels and producing 1,500,000 tons of ore per year, was able to transport it by means of compressed-air haulage at a cost of 14c. per ton-mile.

WHY METAL MINES ADHERE TO SMALL CARS

Short hauls are, of course, more expensive per ton-mile than long ones, while hand tramming when practiced, even over short distances, adds greatly to the cost. Metal mines as a rule use smaller cars than do coal mines, which practice tends to increase the cost of haulage.

Is the small mine car of the metal mine a necessary evil? One instance was cited of where a mine with a 24-in. track gage is using a locomotive that is 42 in. wide. Coal mines often have developed from small to large operations, but in general the cars have been increased in size as the mine has grown. Why has not the metal mine followed the same process of evolution? This may be partly attributable to the fact that in metal mines much hand tramming is still practiced. A man can push a 6-ton load around a sharp curve on a narrow track gage but could not perform the same operation, or at least not with equal ease, if the gage were wide.

Someone stated that an increase in the size of car and the weight that it carried was almost invariably accompanied with an almost corresponding increase in the number and severity of the accidents sustained. Thus safety is almost diametrically opposed to size, or varies inversely with it. Succeeding speakers appeared seriously to doubt this statement. One said that large wide cars increased some hazards but decreased others. While they facilitated tonnage production they augmented the danger of roof falls, and, furthermore, a small car may be readily stopped by its brake, whereas a large one cannot be so speedily brought to a standstill. Inability to stop a car or a trip promptly is the cause of many accidents. Furthermore wrecks of large cars are more serious and costly than those of small ones.

On headings clearance along the sides of the track may be kept ample even though the cars be large, but in rooms this is a more difficult matter. This is particularly true of the room timbers, and there seems to be a fairly definite relation between the size of the car and the number of accidents occurring at this point. If the cars are moved mechanically, however, and no hand tramming is performed this is not strictly true.

DENIES THAT SMALL CARS ARE THE SAFER

Another speaker averred that, other things being equal, the large car was safer and more efficient than the small one but that track gage and track workmanship were important considerations. Small cars, being lighter than large ones, are more subject to wrecking. The track must be made of a size and weight to suit the cars handled. In some metal mines roof pressures are abnormally high and this in some cases limits the size of the entries, which in turn limits the track gage and size of car that can be used.

New coal mines use large cars and small locomotives and have comparatively many accidents. As the operation grows the size of the haulage units is increased and the frequency of accidents diminishes. Immunity from mishaps, however, depends largely on the human element and the safety inspector must teach the men to handle the size of equipment used.

At the afternoon session D. E. A. Charlton presided, and E. L. Soloman, mechanical engineer for the Kingston Coal Co., read a paper on "Animal Haulage in Anthracite Coal Mines." He prefaced his paper by stating that the safety committee of his company had adopted a "safety calendar" that had given good results. This calendar contains photographs of various operations performed in the everyday routine of mining. Under these pictures is printed the mine law pertaining to that particular operation. The basic idea of these calendars is that, being distributed freely among the miners, they will be taken home and hung up in a prominent place. Although the miner possibly cannot read English himself some of his children doubtless can and they immediately ask their father if he does the kind of work shown in the picture in the manner prescribed. This "starts something" that results beneficially to all concerned.

Discussion following this paper brought out the fact

*Associate Editor, *Coal Age*.

that a mule or other animal, like a man, renders a measure of work in approximate proportion to the care and common sense bestowed upon him by his employer. The mine mule's "general cussedness" is in large measure the result of abuse or neglect.

R. W. Magraw not being present, his paper, which also dealt with animal haulage, was read by the secretary, R. H. Seip. The next paper, on "Block Signal and Dispatching Systems in Mines," by R. T. Murrill, in the absence of the author was presented by Mr. Charlton. This paper, while dealing exclusively with metal mines, described the various signal systems that had been tried and found successful. It was well illustrated with photographs that were passed around through the audience while the description was being read.

At the conclusion of this paper C. B. Hodges in discussing it stated that the tipple of the mine where the automatic block-signal system described was in use looked much like a railroad terminal except that more trains were handled, while the tracks resembled those on the main line of the Pennsylvania Railroad. Here twelve compressed-air locomotives delivered 22,200 tons of ore per day, each trip consisting of twenty 5-ton cars. These were discharged five at a time in a rotary dump. Compressed-air haulage had been selected at this mine on account of its safety.

Air Locomotives Take Up Heading Clearance

Further discussion brought out the fact that the width of air locomotives reduced the clearance alongside them, the tanks being from 30 to 36 in. in diameter. These sometimes filled the heading to the danger point. Furthermore the exhaust of these machines not infrequently caused an objectionable fog in the entry. As the exhaust is made at about 60 deg. below zero it lowers the temperature of the heading air below the saturation point, resulting in the formation of a mist or vapor.

No limit can be set on the availability of the storage-battery or any other type of locomotive. In this respect each installation is a problem in itself, and must be treated accordingly. In substituting mechanical for animal haulage the locomotive often is called upon not only to transport a much larger tonnage than the mules have been hauling, but to move it over much greater distances. It is no wonder then that haulage and gathering motors sometimes fail to do all that is expected of them, or, rather, all that some oversanguine official hopes that they will do.

Wednesday morning's session, at which Mr. Tillson presided, was devoted to the general subject of "Mine Fire Prevention and Fire Fighting." It was treated in its relation to anthracite mines by W. L. Jacobus, of the Susquehanna Collieries Co., of Wilkes-Barre, Pa. Mr. Jacobus dwelt chiefly on the advisability of sealing as a means of fire fighting and gas analysis as a means of determining when the fire is extinguished.

The second paper was on the same subject and was written by H. H. Otto, of the Lehigh Coal & Navigation Co., of Lansford, Pa. In the absence of the author this paper was read by Mr. Tillson. The next two papers, by Joseph W. Reed and G. M. Gillette, respectively, both of the Consolidation Coal Co., dealt with fires and fire fighting in bituminous mines. The latter paper was illustrated with lantern slides of a fire in a remote new mine in Letcher County, Kentucky. In this case when flames were issuing from the main slope, so that the erection of a stopping in it was impossible, the opening was closed by blasting down the mountain side, which rose precipitously above the slope mouth. The fire was brought under control and finally extinguished after a hard fight, which, however, lasted only a few days.

The concluding paper of the session, treating of fires in metal mines, was written by H. M. Wolflin, of the California Industrial Commission, San Francisco, Cal. This paper, unfortunately, held little interest for coal men. It was read by Mr. Tillson in the absence of the author.

Discussion on all papers was reserved until all had been read. This discussion while not lengthy brought out several interesting facts. Thus the question was asked, "How low must the percentage of oxygen in the air be in order to extinguish a fire?" The answer was made that one fire that had been burning for about two weeks was extinguished by an atmosphere that contained 16 per cent of oxygen. No gas was present in the section of the mine affected and the open lights employed went out. Farther inbye the atmosphere contained only 7 per cent of oxygen. In quelling a fire at Sunnyside, Utah, the mine was sealed for thirty days and the oxygen content of the air reduced to 4 per cent. In this case dead air within the sealed workings was circulated in order to cool down the hot area.

Another question then asked was: "Has air depleted of oxygen, such as flue gases from a power plant, ever been used to smother a mine fire?" No one knew of such a case but the suggestion may be a valuable one nevertheless. It was stated by one speaker that a little fire in a large area presented much greater difficulties than a big fire in a small area. Some fires have been purposely allowed to burn themselves into sizable proportions before final sealing was attempted. In the Georges Creek region an old fire of vast extent has doubtless been smothered repeatedly only to break out again with the admission of air. This is on account of the heat of the coal and the surrounding strata.

Shallow Mine Fires Are Fed From Surface

Bratticing to smother a fire is ineffective where the ground is badly crushed, as air finds its way to the fire through these openings, rendering the stopping of little value. In sampling gas from a fire the place where the sample is taken is important. For this purpose air that has passed the fire should invariably be taken and not merely air at some point behind the fire.

Water sometimes is poured onto a mine fire by means of boreholes drilled through from the surface. Silting also may be performed successfully sometimes through such holes, care being taken to use incombustible material such as tailings or crushed rock for this purpose. A passage, such as a heading, that is full of caved material cannot be relied upon to exclude the air sufficiently to extinguish a mine fire.

After the election of officers to serve during the ensuing year the meeting adjourned. B. F. Tillson was re-elected chairman and R. H. Seip, secretary. G. M. Gillette, John L. Boardman and A. M. Connibear were elected as first, second and third vice-chairmen, respectively.

Thursday morning's session was devoted to the general subject of "Maintaining Interest in Safety." The first paper dealt with the question of maintaining this interest among executives and was to have been presented by W. H. Moulton and William Connibear, superintendent and safety engineer respectively of the Cleveland Cliffs Iron Co., of Ishpeming, Mich., but in the absence of both authors it was read by Mr. Tillson.

The second and third papers, on "Maintaining Interest Among Foremen and Shift Bosses" and "Among Miners," respectively, were written by Thomas Cowperthwaite and N. D. Hubbell, respectively. In their absence the papers were read by Mr. Seip and Mr. Johnson. A fourth paper was then presented, on retaining the interest of the miner himself. This was by John T. Bradley, of W. J. Rainey, Inc., of Uniontown, Pa. Mr. Bradley not being present, his paper was read by Mr. Tillson.

Safety Inspectors Accompany Shift Boss

Discussion was led by Mr. Johnson. The question was asked: "Should safety inspectors make their inspections in the company of the shift boss?" Mr. Seip stated that he invariably made his trips in this manner. It is much more advantageous to follow this procedure, as in such a case any dangerous condition found can be taken up immediately and in a personal way, so that no hard feelings will result. If the safety inspector, on the other hand, goes on his inspection trips alone the operating official is likely to conclude that he is "snooping" around for the sole purpose of finding fault and with the idea of "putting something over on him."

"How about prizes and bonuses?" was asked. Mr. Seip replied that with the company for which he worked (New Jersey Zinc Co.) every shift boss that has a clear acci-

dent record for a month gets a bonus of $5. In addition to this there is a semi-annual bonus of $20 if his record shows not more than one accident per 2,000 shifts or 1,600,000 man-hours worked. Another annual bonus of $20 also is provided on the same terms. In addition to all of these another bonus of $20 is paid on a time-lost basis. In order to win this latter bonus the men under the foreman or boss must not lose more than 0.4 per cent of their total working time through accident or injury sustained from accidental cause. If a man wins all the bonuses possible he receives $140 of extra money per year.

As these various bonuses are reckoned on the basis of a percentage of the time lost and of the accidents per unit of man-hours worked, there is no advantage to the man who has charge of only a few men as compared to the one who has a big gang. The bonus as paid on this basis is a powerful stimulus to safer working methods. One day or more of lost time arising from accidental cause is considered as an accident.

The question was asked if accident records were ever padded. Reply to this query was in the negative. When a man is injured he is sent to the hospital and may not return to work until he is given a release from that institution by the house physician. Thus neither the man himself nor the foreman can pad the accident record in any way.

Pays to Advertise Safety to Mine Workers

Bonuses, suppers, banquets and the like are in reality only one form of advertising. It matters little what exact shape this advertising takes so long as it keeps the subject of safety constantly before the men and the bosses. One speaker related that his company once tried the experiment of giving a safety bonus to the men themselves. This took a somewhat peculiar and what to some might seem a ridiculous form. The men were working in gangs and each month that a gang got through without an accident they were treated to cigars "on the company." These were passed out by an official higher up than their foreman, who made it his business to talk pleasantly with the men and "jolly" them about their record. After a few months the men began to look forward to their "safety smokes" with no small degree of pleasure. But one day one careless youth smashed his finger. The joshing and general tormenting that he was subjected to as a result was sufficient to cure not only him but all other members of the gang of taking needless risks. In many instances a man fears the taunts of his fellows far more than he does either the displeasure of the boss or his own personal inconvenience.

Bonuses may take other forms than cash payments. One company pays the expenses of some of its men to the congresses of the National Safety Council and to various meetings of a similar character. The men are anxious to win these free trips and the rivalry between them is keen. It was suggested also that a bonus when paid in cash might well be distinguished in some way from money received as regular wages. Thus wages might be paid either in check or in ordinary currency, and bonuses might be paid in gold.

Chase Men from Hospital to Better Record

A bonus may become a curse if records are in any way padded and injured men are not promptly sent to the physician for his attention. Some foremen have been accused of chasing a man out of the hospital in order to maintain a good record.

Miners often "buck" safety measures because they believe that they are prompted by base, selfish, or mercenary motives. In this connection miners' safety committees are highly advantageous. Contract miners usually like to avoid work on such committees but day men welcome the change from their daily routine.

Following the discussion of the above papers, C. L. Colburn of the U. S. Bureau of Mines, co-operating with the mining section of the National Safety Council, presented an interesting paper on his observations in various coal- and metal-mining camps. This paper was well illustrated with lantern slides and showed safe and unsafe methods of performing many everyday operations both above and below ground.

Friday morning's session, over which Mr. Tillson presided, began with a paper by Mr. Seip on "Travelingways and Signs." This took up the various means of exit from a mine and the methods to be employed for marking them so that a man could readily find his way out quickly in case of accident. So far as possible wordless signs should be adopted, as the men who may need the signs most are often those who cannot read English or read it only with difficulty. Not only should the roads leading outward be plainly designated but they should be safe in themselves—that is, they should, if possible, be routes used for no other purpose than the passage of men.

In the discussion following this paper the question was asked if it was customary to take new or "green" men through the mine in order to familiarize them with the routes of egress. This was answered in the negative. Such a practice was unnecessary as the experiment frequently had been tried of taking utter strangers into the mines and asking them to find their way out. This they unfailingly did without difficulty. It was considered that if those unaccustomed to mines and mining could find prompt egress, men who made mining their business would be able to do at least as well.

Richard Maize, of Uniontown, Pa., a district mine inspector, called attention to the inadvisability of the promiscuous use of the danger sign and cited several instances where this sign had been used at points where real danger either did not exist or was present only periodically. The employment or posting of the danger sign at such points tended only to cheapen its warning and render the miner callous or incredulous when he saw the same sign displayed at some point of actual and obvious peril. He believed, therefore, that no sign at all should be used except at places where real and continuous danger was present. In substantiation of this belief Mr. Colburn stated that in his travels through the mines of the country he had observed that the word "danger" was often employed where "caution" was really meant. He suggested, therefore, that this word be substituted at points where peril was present only periodically or required the presence of the man and the locomotive in order to exist at all.

Piping Drinking Water Below Ground

Provisions for drinking water, particularly underground, was the subject of the next paper, which was written by C. B. Yates, superintendent of the Homestake Mining Co., of Lead, S. D. This described a somewhat elaborate system of water piping and drinking fountains installed underground. At Lead it is the endeavor to bring water to within 500 to 600 ft. of the men when at work. To this end bubbling fountains are placed at the shaft bottom and at the more important points throughout the mine. Some of these are as far as 1,500 ft. from the bottom of the shaft. Most of the men travel the necessary 500 or 600 ft. to get a drink of fresh water. Some, however, prefer to carry the water to their working places and drink it there.

In the discussion following the presentation of this paper it was brought out that one large bituminous coal company apparently pays more attention to the provision of drinking water for its mine mules than for its men. Drinking places are provided for the mules but none for the men, they being expected to carry their water into the mine with them. This, of course, is no particular hardship on the miners, as water taken into the mine warm soon becomes cooled to a palatable temperature. As for town supply this company periodically inspects all springs in the vicinity of its camp, any source found infected is promptly contaminated by filling it up with rubbish or other refuse to such an extent that no one would think of using the water from it for potable purposes.

The third paper of the morning was by Dr. R. R. Sayers, chief surgeon of the U. S. Bureau of Mines, and had for its subject first-aid stations underground. The author strongly advocated the combination of first-aid stations and refuge chambers. Such a place should be of sufficient size to hold fifteen to twenty men without overcrowding,

should be provided with a concrete floor and, if possible, with whitewashed or cement-coated walls and a whitewashed ceiling. It should be built, if practicable, immediately adjacent to the underground office of the mine foreman or some other responsible official. In addition to the requisite first-aid supplies, it should contain, if it is to be used as a refuge chamber, a keg or barrel of water. The contents of this cask should be changed at least once a week and the cask be kept sealed in some manner. Doors of ample width should be so made as to close practically airtight and if compressed air is used in the mine a pipe fitted with a valve at its extremity should lead into this chamber. If possible, also, a telephone with an independent line leading upward through a borehole to the surface should be provided.

In time of disaster men could go to this room, shut themselves in and wait for rescue. They would be provided with a supply of drinking water and if a borehole through the roof were part of the equipment of the station they could communicate with the surface, and in an emergency food could be lowered down the hole. Air might also be supplied either through the air pipe as above suggested, or, if this was not present, through a small pipe or hose lowered through the borehole.

Discussion following this paper brought out several interesting facts, only a few of which can be repeated here. Some physicians object strenuously to going underground to treat a patient, even though they might make observations on the patient's condition that would be highly valuable in later treatment; others, and these are in goodly number, almost insist upon going into the mine and reaching the patient at the earliest possible moment.

Many mines supposed to be well provided with first-aid equipment and material are found in emergency to be utterly devoid of the necessary supplies. This is the result in most cases of petty pilfering on the part of the men employed. It is for this reason that it is recommended that first-aid stations be placed immediately adjacent to the underground office of some responsible official.

Where Should First-Aid Stations Be Placed?

Some diversity of opinion exists as to the advisability of administering first aid underground, some believing that it is better to transport the injured man to the surface, where good light conditions prevail, than to attempt any treatment in the darkness of the mine. As a rule, first-aid training is given on the surface, but if more underground stations were maintained the men would receive more of their training under usual working conditions.

Several methods have been tried to prevent the theft and consequent lack of first-aid supplies. One company places this material in a tin box on which is pasted an inventory of the various items that that box should contain. Each month an inspection is made by the man held responsible for this box and its contents, whereupon a list of the material actually found in it is sent to headquarters or to the central supply man, who immediately returns the articles necessary to bring the box up to standard condition. No large quantities of first-aid supplies are stolen at any one time. Such thefts are all petty and the value of the material stolen in any one month throughout any mine seldom exceeds $10 or $15.

Another company makes a practice of paying $1 to each man who treats an injured person using the contents of his first-aid package, which is, of course, supplied free by the company. This keeps all those entitled to carry and use such a package on the alert for an opportunity to use it. The result is that no such man is without his little pocket first-aid kit for any appreciable length of time. Providing each shift boss with a locked tin box containing the first-aid supplies, for which he is responsible, is another means of preventing the theft of first-aid material. Placing a trained nurse at the first-aid station on the surface adjacent to the mine mouth relieves the company physician of much work. Such a nurse can treat the majority of injuries sustained within the mine as skillfully and efficiently as can the physician himself.

The next subject taken up was that of underground latrines and refuse disposal. The several means for disposing of refuse were discussed and the advantages and disadvantages of each pointed out. At the conclusion of the paper Mr. Seip, of the New Jersey Zinc Co., exhibited an experimental latrine of the pail or bucket type which had been designed and will be tested out by his company. Apparently this device has many advantages. It consists essentially of a pail or bucket provided with a detachable cover, seat, and bail. The whole device is of metal, is extremely simple and substantial in construction and apparently sufficiently heavy to withstand the hard usage and abuse to which it will undoubtedly be subjected.

In use the bucket latrine is placed within the mine at suitable points within easy reach of the miners. The pails are partly filled with sawdust to absorb liquids and usually some form of disinfectant is added to keep down odors. At periodical intervals full pails are removed and new or cleaned ones substituted. As a rule a bucket remains in use not longer than about one week. When brought to the surface the contents of these latrines may be disposed of in any suitable manner, such as dumping into sewers or septic tanks, burying or incineration. Some system of this kind is a vast improvement over the entire lack of sewage disposal under which many, if not most, mines are operated.

The attendance at the Safety Congress was probably the largest in the history of the council. Between 2,000 and 3,000 people participated in the various sessions. For the first time in the history of the Commonwealth of Massachusetts, the State House was thrown open for convention purposes. This speaks well for the esteem in which the National Safety Council is held by the lawmakers of New England.

Numerous Coal Cases to Be Heard by Supreme Court During Fall Term

A NUMBER of coal cases are on the docket of the U. S. Supreme Court, which reconvened for the autumn term Oct. 3. The call of the docket began Oct. 4 and on Oct. 10 arguments in cases began. Chief Justice Taft is presiding.

Decison may be handed down early in the term of the court in the case of the United Mine Workers of America, who seek to reverse decisions of Arkansas courts assessing the union treble damages in the sum of more than $200,000 for damages to property of the Coronado Coal Co. during a strike.

Coal cases pending on the docket are:

Western Fuel Co. vs. Antone Garcia, from the Ninth Circuit.

Marine Ry. & Coal Co. vs. the United States, from the District of Columbia Court of Appeals.

Morrisdale Coal Co. vs. the United States, from the Court of Claims.

Pine Hill Coal Co. vs. the United States, from the Court of Claims.

Northern Coal Co. vs. the Boston, Cape Cod & New York Canal Co., from the First Circuit.

Lambert Run Coal Co. vs. the Baltimore & Ohio R.R., from the Fourth Circuit.

Alexander Howat vs. the State of Kansas, from the Kansas Supreme Court, growing out of the Kansas coal strike and attacking the Kansas Court of Industrial Relations.

American Coal Mining Co. vs. the Special Coal and Food Commission of Indiana, from the Indiana District Court.

Corona Coal Co. vs. the Southern Ry. from the Northern Alabama District Court.

Hillsboro Coal Co. vs. E. C. Knotts, District Attorney, from the Southern Illinois District Court.

Colonial Beach Co., owners and claimants of the steamer St. John, vs. the Quemahoning Coal Co., from the Fourth Circuit.

Peninsular Portland Cement Co. vs. the Consolidation Coal Co., from the Sixth Circuit.

Problems of Operating Men

Edited by James T. Beard

Tapping Body of Water in Adjoining Mine

Shortwall Machine Cuts Into a Mining Not Shot Down —Advance Borehole Gives No Warning of Danger— Light Pressure Head Avoids Disaster—Water Accumulated in Slope Removed by Bailing or Pumping

READING the inquiry of a Kentucky superintendent, *Coal Age*, Aug. 18, p. 262, asking for advice in respect to tapping the water accumulated in a slope, by driving an upraise from the mine workings, reminds me of an experience I had in tapping a large volume of water accumulated in an adjoining mine that had been abandoned.

We had no accurate knowledge in regard to the position of the old workings that we were approaching, as no reliable survey of the old mine was available. Fortunately, however, the old works were practically level and, being a drift mine, little danger was anticipated by reason of any great pressure head.

The entry approaching the old workings had taken a slight rise, which suggested caution, and a 12-ft. borehole was kept in advance of the face of the heading as required by the state mining law. In addition to that, all arrangements had been made to avoid a possible flooding of the mine when the water was tapped. It was hoped we would be able to control the flow and drain the old mine gradually.

Precautions Taken To Insure Safety Prove Unavailing

Seemingly, every precaution had been adopted for safety. We had even called in consultation men of known experience and ability to get the benefit of their advice. But, as Robert Burns has said in his ode "To a Mouse,"

"The best laid schemes o' mice and men
Gang aft a-gley,
And lea'e us naught but grief and pain
For promised joy."

It so happened that the old workings we were approaching had been mined with punching machines, and a place had been cut some 8 ft. in depth, but the coal had never been shot down. We were using a shortwall Goodman machine with a 6-ft. cutterbar. Under these conditions, it is easy to imagine what happened.

The 12-ft. borehole, which we kept in advance of the face of the coal, did not reach far enough to give any warning of danger before our machine cut into the old mining, since the total depth of the 6- and 8-ft. cuts was 14 ft. But again fortune favored us inasmuch as the machine opened only a small hole in one corner of the cut.

Nevertheless, the flow of water through that small hole was sufficient to wash aside the machine and threatened to flood the mine. We worked hard, it may be imagined; but our first attempts to plug the hole with brattice cloth and a pine post met with as little success as might be expected had we attempted to dam the Atlantic.

The Trouble Overcome

Finally, we succeeded in setting posts a few feet back from the face and nailing boards on each side of the posts. That being done, the space between the boards was filled with clay, which was well packed. By this means the flow of water from the break was controlled and we had no further trouble.

That experience, however, causes me to say that I would think twice and then again some, before attempting to drive a place up from the mine workings to tap the body of water accumulated in a slope where the pressure is estimated as being about 1,500 tons bearing on the coal at the foot of the slope.

My advice is to bail the water from the slope in the manner suggested in the reply to this inquiry. Apparently there is nothing to prevent removing the water in that way and it is the only safe method to adopt.

Pikeville, Ky. George Edwards.

ANOTHER LETTER

REFERRING to the question of draining a slope filled with water, by tapping it from below, as suggested by a Kentucky superintendent in *Coal Age*, Aug. 18, p. 262, allow me to add a few words endorsing what has already been said in the reply to this inquiry.

The slope is described as having an inclination of 45 deg. and 700 ft. long. The calculation given in the reply shows that the pressure of the water at the foot of the slope is 1,515 tons, or nearly 215 lb. per sq.in. That being the case, the proposition of tapping the water from the bottom is entirely too dangerous to be considered.

It would seem to me strange if any practical miner could be prevailed on to undertake the work of driving a place up under this great lake of water. My experience is that no man could be found who would be willing to undertake such work; nor would any miners stay in the mine below if it was to be attempted.

In the first place, let me say, this slope should not have been abandoned and allowed to fill with water, when only 100 ft. remained to be driven in order to reach the mine below. The superintendent should have foreseen the situation that he now is facing, in reference to unwatering the place.

Safety First and Always

However, the present problem is to find the most effective means of getting the water out of the slope. Let me say that the editor has handed this superintendent "safety first" in the reply he has made to the inquiry. Probably the best and cheapest method that can be adopted is to use a sheet-iron skip, as he has suggested.

If there is any reason why a skip cannot be installed for bailing out the water, it only remains to set up a pump at the surface and start pumping the water from the place. In adopting such a plan, means should be used to ventilate the slope as the water is removed, as there is every chance for blackdamp to accumulate in the place and make it unsafe for any one to enter for the purpose of adjusting the line of pipe and lowering the pump as the work proceeds. Oscar H. Jones.

Crawford, Tenn.

Driving Entry on a Curve

Simple and practical method of driving a curved entry in a mine—Entry first laid off on paper and offsets to survey line scaled to find distances to ribs at each five-foot station on survey line.

REFERRING to the method of laying out a track curve in a mine, *Coal Age*, Aug. 25, p. 302, kindly permit me to give what I consider the simplest way of driving the entry, on such a curve, and keeping the entrymen on line, so as to avoid any bad jogs in the ribs.

After experimenting for a number of years with various schemes and even preparing a table of deflections for curves of various radii, I have concluded that the simplest way of laying out the work and keeping the entrymen on the desired line of curvature is to follow the method that I would call the "Sidenote method." This method will be found described on page 33 of McCrystie's book on Mine Tracks.

Regarding the offset method by tangent and chord deflections, described in the reply to this inquiry, great care is required in the alignment of the sev-

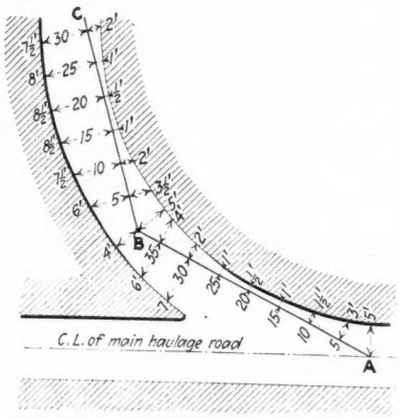
eral points. To insure accurate measurements and alignment, in the use of that method, it will be generally necessary for the engineer to set each chord point himself.

My practice has been to plot the desired curve on a large scale, in the office, drawing the entry ribs and line of survey, as shown in the accompanying figure. The map may be drawn to a scale of 5 or 10 ft. to the inch. The center line is also laid off on the main entry and a point *A* located on it where the curve is to start.

Platting the Curve in Office

After drawing the entry ribs, the next step is to lay off, on the map, the survey lines *AB* and *BC*, such as to clear the inner rib of the entry by a few inches. Five-foot stations are then marked on these lines and offsets measured at right angles to each rib, as indicated in the figure. The offset measurements as scaled from the map are marked just outside of each rib.

If the radius of the curve is short, or the central angle less than 90 deg.,



MEASUREMENTS FROM SURVEY LINES

it may be possible to establish a single survey line that will clear the inner rib and extend through to where the curve stops or reaches the other entry. Otherwise, it will be necessary to employ two or more survey lines, *AB* and *BC*, as shown in the figure.

Having drawn such a plan, a copy is made to a reduced scale, letterhead size, on thin paper so that a blueprint copy can be made and given to the foreman, while the original is attached to the copy of the letter of transmission and placed on file in the office for future reference. This makes a complete record of the matter where it will be always available.

On the same drawing can be shown the location of the frog and switch for use of the trackmen when laying the switch for this cut-off. It is well to observe, in closing, that care will be required, in this method also, to measure the offset lines perpendicular to the survey lines. These offset lines often make considerable angles with the ribs, and it is all the more necessary to use care in taking these measurements.

H. M. KANARR.

Punxsutawney, Pa.

Why Shoot Coal Off the Solid?

Practice permitted by special provision in the Bituminous Mine Law of Pennsylvania—Dangerous from being liable to cause blownout shots—Shooting the so-called "loose end."

I AM quite in accord with the opinion expressed in the letter signed F. W. S., *Coal Age*, Aug. 25, p. 302, regarding the practice of shooting coal off the solid, which the Bituminous Mine Law of Pennsylvania allows, "in districts in which it has been the common practice." This clause of the law it seems to me must refer to some isolated conditions unfavorable to pick mining.

In West Virginia, the mining law prohibits shooting coal off the solid, except in some extraordinary cases where permission is given by the Department of Mines so to do. The law reads (Sec. 36) as follows:

> In any mine in which solid shooting is done, the district mine inspector is authorized to prescribe the condition under which such solid shooting may be done; any operator or mine foreman who causes or permits any solid shooting to be done therein, without having first obtained a written permit from the district inspector, or any miner therein who shoots coal from the solid, without first having obtained permission so to do from the operator or mine foreman, shall be guilty of a misdemeanor and, upon conviction, shall be fined not less than ten nor more than fifty dollars, or be imprisoned in the county jail not less than 30 nor more than 90 days, in the discretion of the court.

In making this provision, the West Virginia law assumes that, in some cases, it is nearly impossible to mine the coal economically with a pick. It is true that even then, in the majority of cases, it could be mined by machines. Such being the case it is only reasonable that the mine inspector, guided by his judgment, should allow the coal to be shot off the solid, pending the installation of machines.

Shooting Off the Solid versus Blasting a Loose End

The meaning of the expression "shooting off the solid," or "solid shooting," should not be obscure. To my mind it has always referred to the blasting of coal that has not been properly undercut, centercut, topcut, or sheared by pick or machine. One writer on this subject (July 28, p. 142) has referred to blasting the coal on a "loose end" as not requiring the mining of the shot. In my opinion, that is nothing more or less than shooting the coal off the solid.

A practical miner can always arrange to have an open or loose end in the face of his breast, just as easy as when drawing back a pillar. It matters little to him if the face is squared or gouged; he calls it a loose end and fires a shot on the solid. Whether it is actually a loose end or not will depend on the depth and location of the hole being such that the powder can break the coal before blowing out the tamping.

The danger of this, or any other form of solid shooting, arises from the liability of the charge not being able to break the coal and the result is a blownout or a windy shot, the force of the powder being then expended wholly or in part on the air, instead of breaking down the coal.

Dangers in Solid Shooting

For a shot to blow its tamping is dangerous, either in a gaseous or a non-gaseous mine, as a disastrous dust explosion may be the result. I have observed the flame of such a shot fill a room for a distance of many feet when there was no gas present in the place.

Again, solid shooting requires the firing of a much larger number of shots than where the coal is properly mined. This keeps the mine atmosphere and the air current laden with the smoke of the gases produced. The miner who is forced to breathe this unhealthy atmosphere is unable to work with the same efficiency.

Perhaps, one of the greatest dangers in solid shooting consists in the weakening of the roof by the force of the shot. This not only requires additional expense and labor in the setting of timbers to support the shattered roof, but the miner working under it is more liable to be caught when least expecting danger. Many a miner has been injured or killed by reason of these conditions, which he failed to realize.

Loss and Damage Resulting From the Practice

Considered from an economical standpoint, the practice of solid shooting should be avoided for the reason that the coal is broken into small fragments and its market value reduced. If the coal contains slate, bone and other impurities it is almost impossible to keep these out of the coal. Much damage is often done by timbers being discharged, brattices torn down and the ends of cars stove in, all of which mean extra expense and labor.

There are conditions, it is true, that make the practice of shooting coal off the solid more excusable and even permissible, with due regard to safety. It is probable that the practice became more widespread during the war when the extraordinary demand for coal led miners to adopt every means to increase their output. In the mining of anthracite coal, also, the practice of solid shooting is rendered more permissible, because of the hardness of the coal and the lesser inflammability of the dust produced.

What Is Not True

It is not true, however, as I have often heard miners say, that it is impossible to mine certain seams of coal in any other way and make a living at it. Several years ago nobody ever thought of shooting coal off the solid or dared to make the attempt. It was all pickwork and the miner had no trouble to make a living then.

After all has been said in regard to our mining laws, safety requires that mining officials, in close touch with their own situation and requirements,

shall use their judgment in making and enforcing such regulations and rules as will make the mining and preparation of coal most economical and safe.

Thomas, W. Va. SAFETY FIRST.

ANOTHER LETTER

IT has always seemed strange to me when reading the Bituminous Mine Law of Pennsylvania that it should permit coal to be shot off the solid. I was glad to see this subject mentioned in the letter of F. W. S., *Coal Age*, Aug. 25, p. 302. The matter is surely one worthy of careful consideration.

It has never been my fortune to be employed in a mine where this practice was permitted and I cannot understand why it should be thought a better method to employ than mining the coal before firing the shot. There is no doubt in my mind but that the practice is dangerous.

Speaking of the Pennsylvania bituminous law, it appears that the lawmakers saw clearly enough that to blast coal off the solid was not a safe practice. This is shown by the fact that the law provides (Article 4, Sec. 14) that wherever coal is shot off the solid the work must be done by shotfirers, after all the men have left the mine.

DOES THE LAW DISCRIMINATE?

The object of this provision seems to be that, in case of accident resulting from the practice, there would be a fewer number of victims. The work must be done after all the miners have departed and the only persons in the mine are the men whose duty it is to fire the shots.

Now, if it is dangerous to shoot coal off the solid when the men are at work in the mine, it is clearly just as dangerous after the men have gone home and only the shotfirers remain. Should not the law provide as much for their safety as for that of the men?

What is strange to me is that the law should thus discriminate in favor of the many and against the few, by allowing a practice that is admittedly dangerous. Certainly there is no reasonableness in making a provision of this kind, unless it is necessary to take such risk in order to obtain the coal. Let us hope that this law will be changed and the practice of solid shooting abandoned.

P. MOLANI.

Avella, Pa.

THIRD LETTER

REGARDING the question of shooting coal off the solid, as I look at the matter it is largely a thing to be determined by the surroundings and the condition of the place where the shots are to be fired. There is all the difference in the world between the blasting of coal in pillarwork and the firing of shots in the solid coal at the face of a heading or room.

In Art. 4, Sec. 9, of the Bituminous Mine Law, I take it that the requirement that the coal must be "properly mined," which is explained as meaning that it "shall be undercut, centercut, topcut, or sheared by pick or machine," applies to cases in which a solid face of coal is being mined and no opportunity is given for a shot to work free, except it is mined as stated in the law.

On the other hand, let us suppose a case where the pillars are being drawn back in a series of rooms. Say the pillars are 12 or 14 ft. thick and divided into sections by breakthroughs 75 ft. apart. This is clearly pillarwork in which it is common practice to fire shots without any previous mining. If the question is asked, "Why?" I answer: Because the work is surrounded on all sides by open space and every shot is free and not bound in the solid.

MANY WILL TAKE CHANCES

It is of course true that some men, even under these conditions, will take chances and attempt, by the use of more powder than is safe, to make a single shot do the work of two. This, however, is aside from the question. It is quite common for a miner to lay a shot in very solid coal if he is reckless or uses poor judgment; but that is no reason why a good shot must be mined in working a pillar.

Before deciding the question of safety in solid shooting, let us inquire what would be the effect in many mines if this custom were to be prohibited altogether by law. If I am correctly informed, much coal is shot off the solid, today, in mines in the West, and even in England.

In my opinion, solid shooting may often facilitate the production of coal, without working an unnecessary hardship on the miner, or exposing him to danger. However, it is my belief that this work should be done by a thoroughly competent person and all shots fired by an electric battery, after the men have left the mine.

Where the conditions are favorable to solid shooting and the work is performed in this manner it appears to me that the chances for accident or injury to anyone will be reduced to as safe a working point as can reasonably be expected. My aim is always to provide for the utmost safety, with due regard for a maximum production of coal.

A few years ago, I remember, there were numerous prosecutions for the violation of the law prohibiting solid shooting. Later, it was seen that the practice was indispensable in certain districts, commercially speaking, which may have led to the modification of the bituminous law.

We must realize that conditions, today, are different from what they were formerly. This is a day of machine mining and the loader has for his kit of tools one shovel, one pick, and one breast auger. Formerly, the practical miner took with him into the mine five or more picks and drills, besides having in his place a drilling machine and other useful tools for breaking down and loading his coal.

Gans, Pa. R. W. LIGHTBURN.

Inquiries Of General Interest

Drying Feeder Gas for Heating and Lighting

Moisture in Natural Gas Seldom Enough To Reduce Its Efficiency for Heating and Lighting—Entrained Water Separated by Baffle—Gas Dried in Condenser

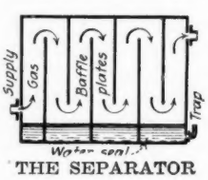
A DRILLHOLE in this vicinity is giving off a large amount of gas that we desire to use for the purpose of heating and lighting. The gas contains, however, a considerable amount of water, which it is feared will reduce its efficiency and give poor service.

I want to ask if it would not be advisable to dry this gas before using it for such purposes in a residence. Please explain the cheapest and best method of separating the water from the gas, so as to obtain the best results.

Paxton, Ind. INQUIRER.

It seldom happens that natural gas issuing from a drillhole contains sufficient absorbed water to interfere seriously with its efficiency when used for the purposes of heating and lighting. It may be that, in this case, the gas coming in large quantities from a wet drillhole carries with it some entrained water, which would of course be objectionable and should be separated before using the gas for the purposes mentioned.

The simplest way of separating entrained water from gas is by means of baffle-plates arranged in a suitable receptacle through which the gas is passed. At the bottom of this receptacle a trap is provided to drain off the water that would otherwise collect.



THE SEPARATOR

A simple form of such a separator is shown in the accompanying figure. The gas enters at a point near the bottom and above the water level. In its passage through the separator, its course is indicated by the arrows. Much of the entrained water is separated from the gas coming in contact with and striking against the plates.

As fast as the water collects at the bottom, it escapes through the trap, which serves the double purpose of an overflow and a seal to prevent the escape of the gas.

Another form of separator is one where the gas is passed over some loose porous substance, such as coke, broken brick or other material held in a container. Such method, however, is far less effective than the separation by baffle-plates.

Where the use of the gas is on a larger scale and it is desired to dry it as much as possible, the common practice is to employ a condenser. It is stated that a pressure of 10 lb. per sq.in. will remove from 60 to 65 per cent of the moisture in the gas, and a pressure of 20 lb. per sq.in. will yield almost a perfectly dry gas.

Horsepower of Steam Turbine

Steam turbines the result of empirical design. Power of machine rated in kilowatts, not estimated by formula.

PLEASE state if there is a formula that will express directly the horsepower of a steam turbine in terms of its dimensions and speed. In books to which I have referred, tables are given from which the horsepower can be calculated for different machines. It seems to me, however, that there should be a formula expressing the power of a given machine directly.

Knoxville, Iowa. STUDENT.

Steam turbines are the result of empirical design. That is to say, the machine has been designed and developed by means of a series of experiments and tests made to determine the form of blade or impeller, kind and size of nozzle, dimensions and general arrangement of all parts throughout that will afford the highest efficiency in transforming the energy of the steam into mechanical energy for driving other machines.

There is no formula for calculating the power of a steam turbine that will apply to the different types of these machines. Before leaving the shop, every steam turbine is given a rating in kilowatts. The kilowatt is 1.34 hp. Practically, three kilowatts are equivalent to four horsepower.

If it is desired to study the design and construction of steam turbines we would refer this correspondent to the following books: "Design and Construction of Steam Turbines," Harold Medway Martin, Longmans Green & Co., New York; and "Steam Turbines," Carl C. Thomas, John Wiley & Son, New York. These books are reliable and give a fund of information regarding steam turbines.

Examination Questions Answered

Miscellaneous Questions

(Answered by Request)

QUESTION—*What method would you recommend for timbering working-places, keeping in mind the safety of the workmen and the recovery of the greatest amount of coal?*

ANSWER—The mine foreman and the superintendent, in connection with the district mine inspector, should decide on a systematic method of timbering that is best adapted to the conditions in the seam. This can only be determined by a close study of the nature of the roof, floor and coal, depth of cover, thickness and inclination of the seam, and the kind of mining employed. In general, the posts should be set in rows parallel to the face of the coal and at specified distances apart. Strict regulations should then be enforced to compel each miner to timber his place promptly and in accordance with the plan adopted.

QUESTION—(*a*) *State how you would proceed to move a large body of firedamp and what precautions you would take; also say what dangers there would be in doing this work.* (*b*) *Under what conditions may afterdamp become explosive?*

ANSWER—(a) Before taking any steps to disturb or remove a large body of firedamp, notify and withdraw all the men working on the return of that current. It may be advisable also to remove the men working in adjoining places on the intake side and, perhaps, from the entire mine. This being done, safeguard all entrances to the return airway by placing reliable men at such points with instructions to prevent any one from entering the return airway. Having increased the quantity of air in circulation in this section of the mine, approach the place where the gas has accumulated, on the intake side, using only approved safety lamps and taking every precaution not to advance more rapidly than the gas is removed. It will generally be necessary to erect brattice to deflect the air current against the body of gas.

In performing this work there is danger of a possible fall of roof driving the gas back on the men and causing its ignition on the lamps by blowing the flame through the gauze. Or, the gas may be ignited by a defective lamp or one that is not properly handled, or by a spark struck with a pick or hammer.

(b) Afterdamp may become explosive by the addition of fresh air. It often happens that the afterdamp contains much unburned methane, which forms firedamp on mixing with air.

QUESTION—AAQ *Compute the horsepower of an engine* 18 *x* 36 *in., steam pressure* VVJ *lb. per sq.in* .ABQ .*What weight can be lifted by this engine with an* 18*-in. crank on the shaft of a* 6*ft. drum?* ACQ *With the same length of crank and a* 12*-in. spur or pinion geared to a* 6*-ft. drum, what weight will the engine lift?*

ANSWER—(to) To compute the horsepower of an engine, it is first necessary to know at what point of the stroke the engine cuts off steam, and from this to calculate the mean effective pressure in the cylinder. Assuming a two-thirds cutoff, the mean effictive pressure is calculated by the formula

$$M.E.P. = 0.9\,[0.917\,(p + 14.7) - 17]$$
$$= 0.9\,[0.917\,(110 + 14.7) - 17]$$
$$= 87.6 \text{ lb. per sq.in.}$$

The diameter of the cylinder being 18 in., its sectional area is $0.7854 \times 18^2 = 254.47$ sq.in. The length of stroke is 3 ft. (36 in.). Unless otherwise specified, it is customary to estimate on a piston speed of 600 ft. per min. in which case this engine is making $600 \div 3 = 200$ strokes per minute. Then, assuming an efficiency of 85 per cent, the horsepower of the engine is

$$H = \frac{p\,l\,a\,n}{k\,33{,}000}$$
$$= \frac{87.6 \times 3 \times 254.47 \times 200}{0.85 \times 33{,}000} = 476.8 \text{ hp.}$$

(b) An engine will always lift a greater weight than it can hoist. In estimating the lifting power, the full steam pressure is used, instead of the mean effective pressure. In that case, the total force exerted on the piston is $110 \times 254.47 = 27{,}991.7$ lb., say 14 tons. The diameter of the drum being twice the length of stroke of the engine, the lifting power is one-half the total pressure of the piston, or 7 tons.

(c) The question states the diameter of the spur or pinion gear is 12 in. (1 ft.) but does not give the diameter of the drum gear. Assuming the latter is equal to the diameter of the drum, the ratio of gearing is 1:6. The length of stroke or diameter of the crank circle being 3 ft. and the total pressure on the piston 14 tons, the turning moment at the center of the crankshaft is $3 \times 14 = 42$ ft.-tons. Then the ratio of gearing being 1:6, the turning moment at the center of the drumshaft is $42 \times 6 = 252$ ft.-tons. Finally, the lifting force exerted at the circumference of the 6-ft. drum is $252 \div 6 = 42$ tons, which is the load the engine can lift at the moment when the force exerted on the piston is applied at right angles to the crankshaft. For numerous reasons, however, the engine will not hoist this load, as the effective power varies from a maximum to zero throughout the cycle of a revolution.

Distribution of Supplies Next in Importance to Labor In Efficient Keeping of Coal-Production Costs*

Without Detailed Apportionment of Those Items, Cost System Will Fail—Improved Accounting as Important as Modern Machinery—Division of Royalty Depletion, Depreciation and Obsolescence Charges

By R. W. Gardiner†

In the proper keeping of coal-production costs, the question that arises after analysis of the three main divisions of labor is the distribution of supplies. Supplies should be distributed in the same way as labor. Although it may not be practical in a small operation, it is unquestionably desirable that the superintendent have this information. He cannot very well cut down his consumption of supplies unless he knows what supplies are used and where they are used. The old method of handling supplies was to charge everything to a supply account when it was purchased and to keep no record of its consumption. Consequently, the superintendent was forced to work absolutely in the dark so far as this important element of his costs was concerned.

Labor and supplies are the two items that necessitate the greatest amount of clerical labor and that present the most difficult problems. But too much stress cannot be laid on the fact that without the detailed distribution of these two items any accounting system will fail to accomplish the principal purpose for which it should be used, namely, the reduction of the costs of operation. That is where the operator should get his real profit from a cost system. There are few operators who would hesitate to spend money for improved machinery. It is, however, a very difficult task to convince these operators that an investment in improved methods of accounting will yield actual returns in many cases even greater than they can obtain from improved machinery.

Items Included Under Overhead Expense

Overhead. — The first item of overhead is what may be called strictly mine overhead. It includes superintendence, engineering and mine-office expense. These items require no explanation. The next item of mine overhead is power.[1] Under this item should be charged the full expense of the power department, including all supplies used by that department. Boiler fuel is a subject that has given rise to a great deal of discussion, because opinions differ as to the rate at which it should be charged into the power account. It is obvious that if no charge is made to power for boiler fuel, and the amount of coal sold is considered as the total production, the cost of the boiler fuel will be absorbed. But it will be absorbed in a way that does not show the true cost of developing power. The best way, in the writer's opinion, to handle this item is to charge it into the cost of production in the current month at the average cost for the preceding month. This method will not be exactly accurate, as the cost varies somewhat from month to month, but in my judgment it is the closest approximation which can be used.

The items discussed above are those over which the mine superintendent has some control, and the cost figures for these items should be given to the mine superintendent each month. The other items of cost are those over which he has no control, and it is not necessary that he should have information in regard to them.

Royalty, Depletion, Depreciation and Obsolescence. — Royalty is a definite charge per ton. In some instances there is a specified minimum amount which must be paid whether an amount of tonnage sufficient to earn the minimum amount is mined or not. If this royalty is defined under the contract as advance royalty or as a payment on coal to be mined later, it can be carried as an asset in a deferred charge account, provided there is sufficient reason to believe that it can be worked out within the time specified. If, however, it is a definite payment by the month or by the year, with no possible chance of recovery, the minimum amount should be charged into cost, with the result that the royalty will be increased over the amount per ton required to be paid by the contract.

Depletion Charge Retained in Reserve

Depletion is a charge similar to royalty, except that the amount of money represented by the depletion reserve is retained by the business instead of being paid to some outside party. In this case the total cost of the coal lands less the value of the surface should be divided by the estimated recoverable amount of coal, the resulting figure giving the depletion charge per ton. This estimate should be a very conservative one, so as to insure that when the coal is worked out there will be no assets shown on the books.

Depreciation is another item which has been the subject of much discussion, and accountants differ widely in their opinions as to the way in which it should be treated. Most of them agree that the value of the plant and equipment when the coal is worked out is practically nothing. The problem, therefore, is how to charge the depreciation in such a way as to amortize the whole investment during the life of the mine. Some advocate determining the rate of depreciation in the same manner as depletion is determined—that is, at a rate per ton. The objection to this plan is, that where a considerable quantity of coal land is held, large parts of the plant may wear out or become obsolete long before the coal is exhausted.

Uncertainty as to When a Mine is a Mine

The answer to this objection depends largely on the question as to when a mine is a mine. Some people contend that a mine is a mine and that charges to capital should cease when you begin to hoist coal from the rooms. Others take the position that the mine is on a development basis until coal can be produced at a cost not more than the market price. The latter idea, I believe, is erroneous, because in periods of depression the mine may be fully developed, and yet may not be producing coal at the market price. Another method which, in my judgment, produces more accurate results, is to assume that the development period is over when a mine reaches a certain percentage of the output which the engineers have planned for that mine. If this method is followed, the tonnage method of charging depreciation can be adopted, but it is necessary that all charges for new equipment or replacements should be made against operating cost.[2]

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*This is the second installment of a paper entitled "Coal Production Costs," delivered before the Pittsburgh Chapter of the National Association of Cost Accountants. The first installment appeared in *Coal Age* last week. Copyrighted by National Association of Cost Accountants.

†Commissioner, Pittsburgh Coal Producers' Association, Pittsburgh, Pa.

[1]In the system of the National Coal Association, power is treated at some length on page 13. It is stated that "the generation and transmission of power is about the only expense about a coal mine that is not in total directly chargeable to some one subdivision of operating work." "The cost of coal to the operator for his own consumption is what he could get for it in the market. If an unmerchantable product is used under the boilers, it should be charged at its cost of production. If cost of fuel is not included in cost of power, the accounts do not exhibit true cost."

[2]The system of the National Coal Association contains a discussion of depletion, depreciation and obsolescence, with excerpts from the Federal tax regulations bearing on these problems of accounting.

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

THE inevitable readjustments from the artificial stimulation of the war boom and from the expansion of the period immediately following the war have been drastic and painful to this country, and their consequences continue to be felt, according to the October bulletin of business conditions issued by the Mechanics and Metals National Bank of the City of New York. "But, speaking broadly," the bulletin continues, "these readjustments have been toward health and not away from it, and the tangible good effects are making themselves apparent.

"This, of course, does not signify that we have definitely reached the bed-rock of reaction and that the upward swing is under way, needing only the free flow of credit to carry it into the fullness of prosperity. After a season of deflation, doubt and cross currents, the economic soundness of the country is asserting itself in a way that is sufficiently notable to command the attention and envy of the entire world. But trade as a rule improves in the fall of the year; October and November are months when men naturally take hold of things with vigor and seek to overcome the summer slack.

"The seasonal autumn expansion that always bears a favorable contrast to summer dullness should not, therefore, be mistaken this year for the beginning of a pronounced and substantial business revival. Improvement is under way, but a broad, general sweep forward is not immediately to be expected, for while domestic influences would seem to be contributing to a betterment in business, there are other than domestic influences that supply a governing element in our affairs, and it is these that must be adjusted favorably before the full tide of business health can make itself felt."

Railroads Taking on Many Men

According to an announcement by R. E. McCarty, general manager of the Central region of the Pennsylvania R.R., 450 men have just been put to work in the shops at Pitcairn, Pa., and 165 at the Conway shops. They are employed in car repair work. Approximately 760 others will be distributed among the local repair shops at Olean, N. Y.; Canton, Ohio; Dennison, Ohio, and Verona, Pa., on the following basis: Olean, 300 men; Canton, 150 men; Dennison, 150 men, and Verona, 160 men.

The number of employees on the Pennsylvania System increased 3,926 to 194,437 in the last month, it is reported by officials of the company. This was due to increases in repair gangs, but the total is still considerably below the peak of 279,599 reported on Sept. 15, 1920. The company's low point was reached on May 15, 1921, with 185,625. The force was not changed much in June, but it has been steadily increasing since that month. The average number of active employees on the system in recent years was reported as follows: 1919, 263,352; 1918, 241,114; 1917, 224,614; 1916, 215,266.

More than 1,200 men have been placed on the payroll of the Pittsburgh & Lake Erie R.R. in the last few weeks to take care of anticipated new business.

Freight Loadings Still Gaining

Loading of revenue freight on American railroads totaled 901,078 cars during the week ended on Oct. 1, compared with 873,305 during the preceding week, or a gain of 27,773 cars. While this was the largest number loaded during any one week since Nov. 13, 1920, it was 91,205 cars less than were loaded during the corresponding week in 1919. Except for livestock, which showed a slight decrease, and ore, gains were reported in the loading of all classes of commodities compared with the previous week, while for the first time this year loading of merchandise and miscellaneous freight, which includes manufactured products, eclipsed the total for the corresponding week last year.

Tire Makers Increase Output

Following the action of the Kelly-Springfield, Ajax and Lee tire manufacturing plants it is reported that the Goodrich company is increasing its production approximately 1,000 tires a day, which means that the company is now turning out on an average between 6,000 and 7,000 daily for this month. Akron is said to look upon the Goodrich change as a sign that the larger companies have swung into line for better business. Practically all the small rubber companies are operating at capacity or close to it.

Unfilled Steel Orders Gain

The United States Steel Corporation reported Oct. 10 that unfilled orders on its books amounted to 4,560,670 tons, an increase of 28,744 tons over the preceding month and the first gain in bookings since July, 1920, when the depression in the industry first began to get under way. The improvement that took place in September confirms the belief of trade authorities that the worst of the depression was felt in July and August. Recent reports from mill centers have told of increased buying and resultant price advances in most classes of steel products except rails.

Production of steel ingots in September by thirty leading companies, representing 84.2 per cent of the country's total, was 1,174,740 tons, according to figures compiled by the American Iron and Steel Institute. This was an increase of 36,669 tons over the August production and was a marked advance over the low point reached in July, when output was only 803,376 tons.

Moline Plow Co. to Resume

The Moline Plow Co., recently reorganized by a creditors' committee, plans to resume operations at its Rock Island plant, known as the Universal Tractor Co., where, after a year of idleness, motors for the Stevens six cars will be manufactured. It is planned that early in December 200 former employees of the Universal Tractor Co. will be placed at work.

Not Many Unemployed in Paterson

That Paterson, N. J., is not as hard hit by unemployment as many other large cities, was the opinion expressed by business men and manufacturers who were called in conference Oct. 10 on the employment situation by Acting Mayor J. Willard Deyo. While employment conditions are not as bright as they have been, it was pointed out that, aside from apparently temporary dullness in the silk and metal trades workers in Paterson are being kept fairly busy.

Canada's Imports of U. S. Bituminous Gain; Anthracite Nearly Stationary

PRELIMINARY reports from the Dominion Bureau of Statistics show, by months, imports of United States coal into Canada during the first half of 1921 and for the corresponding periods in the two years immediately preceding. Comparison shows that monthly imports of anthracite in the three years have been quite similar. Receipts of bituminous coal however, have in each month of 1921 exceeded those in the corresponding month of 1919, and only in March and April were receipts in 1920 larger than in the present year.

MONTHLY IMPORTS OF COAL INTO CANADA

(In Net Tons)

ANTHRACITE

Month	1919	1920	1921
January	399,686	359,427	328,853
February	347,866	294,903	307,671
March	170,754	440,222	384,373
April	209,958	263,077	274,502
May	461,791	338,321	458,841
June	430,812	472,157	506,592
Totals	2,020,777	2,168,107	2,260,832

BITUMINOUS

	1919	1920	1921
January	977,777	529,782	1,369,688
February	720,915	570,266	887,605
March	613,417	992,593	818,258
April	393 141	711,221	578,856
May	736,426	695 040	980,456
June	1,261,304	1,101 700	1,423,551
Totals	4,702,980	4,600,602	6,058,414

From the following table it is seen that imports of United States coal into Canada during the first six months of 1921 compare favorably with receipts during the corresponding periods in the past six years. Anthracite receipts, which totalled 2,261, 000 net tons, were larger than those of any recent year, exceeding even 1917, a year of heavy Canadian demand for hard coal. The bituminous tonnage imported—6,058,000 tons—has been exceeded only twice in the past six years, being 334,000 tons less than in 1917 and 1,682,000 tons less than in 1918.

IMPORTS OF ANTHRACITE AND BITUMINOUS COAL INTO CANADA, FIRST SIX MONTHS OF 1921, COMPARED WITH 1915-1921 (a)

(In Net Tons)

Year	Anthracite	Bituminous
1915	1,914,000	3,309,000
1916	2,097,000	5,848,000
1917	2,232,000	6,392,000
1918	2,180 000	7,740,000
1919	2,021 000	4,703,000
1920	2,168 000	4,601,000
1921	2,261,000	6,058,000

(a) For several reasons the statistics of imports from the United States kept by the Canadian Government and the American statistics of exports to Canada do not agree exactly, the quantities recorded by the Canadian Government usually being somewhat smaller. The Canadian figures are here used as they represent the rate at which coal was received for consumption in Canada.

Mortimer Elwyn Cooley Succeeds Hoover as President of Engineers' Council

MORTIMER ELWYN COOLEY, dean of the College of Engineering and Architecture of the University of Michigan, has been elected president of the American Engineering Council of the Federated American Engineering Societies. The Executive Board of the Council announced Dean Cooley's election at a meeting at the Cosmos Club Dean Cooley's election at a meeting at the Cosmos Club in Washington Sept. 30, stating that he would assume office at once and carry out an extensive program in the interest of the public and the profession of engineering.

Born in 1855, Mr. Cooley was graduated from the U. S. Naval Academy in 1878. In 1885 he resigned from the navy to accept the chair of mechanical engineering at the University of Michigan. In the same year Michigan conferred upon him the honorary degree of M. E. He became dean of the College of Engineering in February, 1904, and of the College of Architecture in 1913. He received the degree of LL.D. from the Michigan Agricultural College in 1907 and Eng.D. from the University of Nebraska in 1911. During the Spanish war he served as chief engineer of the Yosemite, a converted Morgan liner manned by Michigan State Naval Militia.

Mr. Cooley was vice-president of the American Association for the Advancement of Science in 1898, director of the American Society of Civil Engineers, 1913-1916; president of the Society for the Promotion of Engineering Education, 1920-1921, and president of the Michigan Engineering Society in 1903. He became a member of the American Society of Mechanical Engineers in 1884 and served as vice-president during the year 1902-1903, and in 1916-1917 as chairman of the Executive Committee, Detroit section. During 1918-1919 he was president of the society.

Supreme Court to Decide if Coal May Be Pro-rated in Pinch Despite Contracts

THE question as to whether a coal company is required in event of car shortage to complete orders under contract or to pro-rate its deliveries to customers has been presented for decision to the U. S. Supreme Court. The case in question is that of the Peninsular Portland Cement Co. vs. the Consolidation Coal Co., petition for review of which was filed in Court on Oct. 4. The cement company purchased 55,000 tons of coal from the coal company for delivery between April, 1916. and April, 1917, from West Virginia mines.

The coal company failed to ship 19,000 tons, and when sued for the shortage averred that it was entitled to pro-rate deliveries to all its customers because of a car shortage. The contract was silent upon this count but it excepted from the amount of coal to be shipped "such amount as said coal company is unable to ship on account of strikes, accidents, contingencies of transportation or navigation, or causes beyond the control of either party."

It was alleged by the cement company that the coal company contracted to deliver 25 per cent in excess of its usual output and made new contracts after the car shortage developed, and made large spot sales of a quantity sufficient to satisfy the cement company's requirements. The jury found for the greater part of the cement company's claim but the Circuit Court of Appeals held that the amount of unpro-rated coal was so large as to make it impossible to determine the extent to which the erroneous basis of recovery had affected the verdict. In other words, the court held that the right to pro-rate and actual pro-rating were the same thing and that the coal company was limited in its recovery to a mere recovery of the diverted and unpro-rated coal.

COAL CONSUMED BY THE RAILROADS, as shown by statistics just released by the Interstate Commerce Commission, increased from 7,473,050 net tons in June to 7,634,637 in July. This was to be expected because the amount of business done, as indicated by freight loadings, was greater. August and September are expected to show similar gains. Compared with last year, however, the decrease from month to month in coal consumption by steam locomotives has been marked. In July, 1920, the same roads used 9,823,269 tons, the record for July of this year showing a decrease of 22 per cent from that figure. In no one of the eight regions, either in passenger or freight service, was the coal consumed in July, 1921, as great as in the same month of 1920.

OPEN-PRICE ASSOCIATIONS exchange information on coal and coke, according to a survey made by the Federal Trade Commission by request of the congressional commission investigating agricultural conditions and prices. The commission received replies from 1,773 associations of a list of 2,750, largely manufacturers and wholesalers, and states that of these, 141 associations are collecting and exchanging price information among their members, covering a wide range of products, including coal and coke.

J. D. A. MORROW, VICE-PRESIDENT of the National Coal Association, will address the American Mining Congress at its Chicago convention instead of J. G. Bradley, president of the National Coal Association. Mr. Bradley has not recovered sufficiently from his recent operation to undertake a public address. He is much better, however, and has left the hospital. He is recuperating at his summer home at Mattapoisett, Mass.

United Mine Workers of America Charged with Fomenting the Mingo Rebellion*

By Carl Scholz†

QUITE recently when the newspapers were filled with descriptions of the march of the Kanawha miners the question was frequently asked by newspapers and people living within the mining district and otherwise well informed, "What is the difficulty with the coal industry and how can this march of 8,000 or 9,000 armed men in violation of county and state laws be explained?"

In answer it may be said this march is one of the incidents of the coal business which presents it to public attention passingly, to be, like many others preceding it, soon forgotten. The coal industry is beset with many vicissitudes, and the Marmet march is one of the spectacular commotions which momentarily attract public attention. Likewise, large mine disasters call for big headlines and condemnation of the careless coal operator who sacrifices the lives of his employees for self-gain. Or, again, if a strike develops at a time when coal is greatly in demand the mine operators are condemned because they are held responsible for the fuel shortage.

It does seem that the coal industry is entitled to public attention and consideration. This does not call for governmental investigation and regulation, but it is the duty of all coal consumers to take a continued and unbiased interest in the coal industry, because coal enters into our national welfare by affecting every household in the cost of food, clothing, transportation and all general activities.

It would be impossible to recite the history of the coal industry in a brief article, and no single individual is competent to do so. Unfortunately, in most cases the press depends upon its information contributed by reporters who enter a field where any particular trouble exists and in two days' time assume to grasp the entire problem.

Would Force Logan and Mingo Men to Join Union

The West Virginia disturbance, which became sufficiently important to demand the attention of the President of the United States, is the direct result of the activities of the United Mine Workers, who fomented this trouble for the purpose of forcing the miners of the Logan and Mingo County fields to join their ranks. This organization has a membership of more than 400,000, or about one-half of all the coal miners in the United States, and is further allied with the American Federation of Labor, and therefore has a very powerful influence.

Very little is known about the mine workers' organization by the citizens not living in the mining districts, and it is generally assumed that they concern themselves with welfare work and improvement of living conditions in the mining camps, but quite the contrary is true, the object of the organization being to extend its activities into every mining camp in the United States, primarily for the financial gain of its leaders.

It should be understood that in the organized mines membership is compelled, and once a mine signs a contract no one can be employed at the mine, excepting the officials, who is not a member, and everyone is compelled to pay initiation fees and dues. These dues must be collected by the employers from the payroll and paid over to the officials of the organization. These dues deductions take preference over the requirements of the worker for food and ordinary living expenses.

It is estimated that the annual income of the miners' organizations ranges between $18,000,000 and $20,000,000. If this money would be used for legitimate purposes no one would raise any possible objection, but relatively small amounts have been paid out even in strike benefits. The principal expenses incurred have been in forcing into submission such districts as are working on the open shop. Space does not permit of enumeration of employment conditions which are forced upon mines operating under the so-called voluntary agreement of collective bargaining.

The union dues collected represent about 6c. a ton of the coal produced, but this item is very small compared with the increase in cost of production forced upon the coal companies, which does not benefit the workers, but, nevertheless, represents a very large economic loss. However, attention should be called to the fact that Logan County, with a production of 10,000,000 tons of coal per year, has been made the vigorous point of attack, because it had the promise of yielding an income of $600,000 a year to the organization treasury.

Idleness Attributed to Long Wage Agreement

Another most damaging policy of the miners' organization has been the rule that wage contracts must be for long-time periods, during which no downward readjustments can be made, and this is one of the causes which led to the attempted Logan invasion. The high cost of production in the organized mines of the Kanawha district has resulted in much idleness, whereas the Logan field was able to operate continuously, due to a reduction in wages.

At that, the coal miners of West Virginia are a peaceful, quiet, well-behaved lot of men, and if individual expressions can be accepted, at least 80 per cent of the men belong to the union only because they have to. Under the leadership of radicals they become an infuriated mob, ready to commit any sort of depredations and even murder, as has been the case during the Marmet assembly. The miners receive public sympathy as "toilers who work in the bowels of the earth," but after all, work in mines is much to be preferred to work in the fields or on the railroad tracks on account of the difference in earning power, the elimination of unfavorable weather conditions and relatively low living expenses.

If this were not so it would be impossible to get men to work in the mines. Of this the public knows little, because, unfortunately, mines have to be located where the coal exists and usually the mining fields are remote from larger centers of population. The older camps may not contain attractive houses and frequently miners live in shacks, but the newer towns contain comfortable houses, equipped with water and electric lights, with the rental ranging from $1.50 to $3 per room per month; fuel is furnished for $1.50 per month; doctor's services for the entire family at $1.75 per month, and the company's stores sell their supplies at prices which compare favorably with other localities.

Coal Miners Seldom Own Their Homes

By reason of the topography and limited amount of surface for town sites, it is impractical for miners to own their own houses, but even where houses have been offered for sale very few of the miners buy them, because they feel that owning a house enslaves them to the particular company operating in that territory. This feeling exists in other states where ample town-site space is available.

The earnings of the miners in the organized field is a minimum of $7 per day for inside labor. Coal loaders earn on an average of $12 a day, ranging as high as $18 to $20 with the better workers.

Another and vital point which deserves attention is the complete political control which the union is striving to accomplish, and great strides have been made in this direction. The completeness of the organization can be seen when the arrangements in connection with the Marmet assembly are reviewed. The assembling, arming, transporting and feeding the 6,000 to 8,000 men which the miners mustered into service in three days has evoked comment from the military men which were sent into the field to

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disperse the miners, and it is well known that these arrangements were carried on for several months and so carefully concealed that it came as an utter surprise to the State and the Federal Government was called upon to send troops at an expense estimated at $1,000,000 to quell this insurrection, at a time when every effort is being made to reduce governmental expenses in order to relieve the taxpayers from burdens which now shackle every industry.

The political strength of the miners is easily understood, because to every coal operator with perhaps five or six votes, including his official family, there are from 200 to 1,000 miners. The politicians usually listen to the greater number, and it is on this account that the attention of the citizens in non-coal producing states is invited to the study of this problem, because finally the coal operator is merely the intermediary between the worker and the coal consumer. The public therefore is vitally interested that the wages earned by the worker be fair to both sides.

Unless some check is made the recent situation will prove to be but a forerunner of other disturbances which will be far more serious.

On March 31, 1922, the contracts between the miners and operators with both the bituminous and anthracite mines will expire. Heretofore the contracts expired at different times, insuring the operation of one group of mines if the other should be idle. The announced object of the miners' leaders to obtain at the next wage conference are:

First. Higher wages.

Second. A six-hour day and five days per week.

But what the organization has pledged to its members to do is to demand:

Third. Nationalization of the mines, and

Fourth. Last, but most important, though not announced, control of the American Republic.

The question is, how long will the American people stand for it?

Conference Report on Bituminous Industry Disappoints; Strike Threat May Speed Up Production

By Paul Wooton
Washington Correspondent

ASKED for his opinion of the bituminous coal report made by the Committee on Mining of the Unemployment Conference, a leading economist said: "One of the most disappointing things of the whole conference was the report prepared by persons amply equipped to bring out something more constructive. The salient questions facing the industry come in for only negative reference, if mentioned at all. It is very disapointing that this array of intelligence could think of nothing to say."

It was explained that the only reason the conference did not adopt the report was that some members of the Transportation Committee objected to the reference made therein to assigned cars. The question is being asked as to why assigned cars were considered at all by a committee studying the employment situation. Certainly, assigned cars have had no influence on unemployment during the summer and autumn, as there have been large surpluses of cars. Even in times of car shortages the effect on employment is indirect and comparatively insignificant. The mines that have the cars absorb the labor.

Frenzied Efforts Likely to Follow Strike Talk

The report was referred to as supporting Senator Frelinghuysen's contention that the coal industry seems unable to unite on anything constructive but overnight it can perfect the closest co-operation to oppose legislation or to take any other step looking to its selfish interests. In that connection it is pointed out that nothing was done at the unemployment conference that promised any general relief from unemployment among coal miners. The various municipal activities do not reach to the coal fields. It just happens, however, that developments since the close of the unemployment conference make it seem probable that there soon will be work for any coal miner who cares to accept it.

In the face of a general railroad strike, frenzied efforts to get out the maximum amount of coal possible during October are expected. In the event of a strike, it is believed that coal will be moved if troops have to be used to bring the trains through. With the revival of manufacturing and the prospects for a much larger volume of business next spring, it is predicted that fuel supplies will be built up as a protection against a coal strike.

Information laid before the unemployment conference indicate that social unrest in the United States is much more widespread than has been realized generally. The men who thus interpret the data, gathered systematically from all parts of the country, are not those who trot out the bogey of Bolshevism. The prevalence of discontent is so widespread that the leaders in the conference agree that fundamental improvement of our social and economic system must begin at once. The fact that there are 4,000,000 men out of employment at this time is referred to as a disgrace of the first order and an outward indication of the need for inaugurating more intelligent economic policies. The recrudescence of coal-control bills in Congress is pointed to as an indication of the times.

In that connection it is known that some of the leading figures in the conference cannot disguise their disgust with the frequent demagogic charge that capitalism is the dominant factor in the United States. They point out that the United States is the outstanding example of all history of an individualistic country. Individualism and equality of opportunity are so emphasized that capital really comes in for little public concern. There seems to be no doubt that business as a whole suffers materially because the public is not sufficiently considerate of capital.

The unemployment conference has brought out with particular clearness the great lack of fundamental knowledge necessary to the intelligent conduct of business. Even in dealing with the immediate object of the conference, the whole opportunity of its being helpful has been jeopardized by lack of real statistics as to unemployment. By a process of elimination, more than anything else, the conference finally established that the unemployed certainly are not in excess of 4,000,000, revealing that business for months has had to withstand the shock and lack of confidence engendered by seemingly authoritative reports of 5,700,000 or more being out of employment.

The unemployment conference has not been carried away by the tendency toward centralization. The burden of the solution of the problem of unemployment has been thrown upon the communities. The Federal Government can help but the conference will do all in its power to see to it that Governors of states and Mayors of cities do not pass on unpleasant responsibilities to the Federal Government. State and community officials are being pushed into action and aroused to the necessity of carrying the country through the winter without suffering.

The conference necessarily brought up some discussion of employer and employee relationships. Among the thoughts brought forcibly to the attention of the employers was the one that control of labor by its less intelligent element must be avoided. Particularly favorable mention was made of shop councils. It is stated that there has not been a strike in an industry where shop councils have been established. If they have no benefit other than freeing labor of brutal and unjust foremen, the plan is worth while, it is contended.

From the information available at the Department of Commerce and at the unemployment conference, it may be

judged that the coal industry is in desperate straits. The importance of coal to all industries makes the attitude of the United Mine Workers of the greatest public interest. Since a threatened strike slows down business and has a general upsetting influence months in advance of the possible time of the strike, an effort was made to get the bituminous coal operators and the United Mine Workers to agree in advance to arbitrate any differences that might arise next spring.

For several hours on Saturday, Oct. 8, President Harding, Secretary of Commerce Hoover and Secretary of Labor Davis conferred at the White House, following luncheon, with members of the central committee of the United Mine Workers, including President John L. Lewis of the miners' union; Vice-President Philip Murray, President Lee Hall of the Ohio union; President John Hessler of the Indiana union; President Robert Fitzgibbon of District No. 5 of Pennsylvania and legislative agents John Moore and Walter J. James.

The object of the conference was the desire of the government to prevent a strike of bituminous miners next spring in event of disagreement between miners and operators over a new wage scale. It is understood, however, that the conference lacked definite results in view of the determination of the union at its Indianapolis convention last week to make its stand as to wages until February. The operators agreed but the representatives of the mine workers declined to agree to any such proposal.

Many have discounted the probabilities of a coal strike, but the unemployment conference was told that the situation is a serious one. It is made the more serious by the low level of consumers' stocks. The railroads owe more than $100,000,000 for coal already burned. Due to the failure of Congress to pass the funding bill, the railroads are in no position to buy coal to store. Instead of having fifteen days' supply on hand, they should have three months' supply. The members of the conference were urged to use their influence with the people to lay in three months' supply now. At any rate notice has been served on all consumers and the full responsibility of any coal shortage this winter has been placed squarely on their shoulders.

Wage Proposal Held to Be Vicious

In the discussion of the coal situation it was a generally-held opinion that it is vicious to attempt to build up a daily wage large enough to cover the idle time. If reserves were sequestered in the season of demand, to be used to provide for the period of unemployment, there is a feeling that efforts to increase the number of working days would have more encouragement. The plan of laying aside 10 per cent or some other proportion of earnings for hard times was described as being simply composite providence.

The mining committee prepared a series of five recommendations on the bituminous coal industry but they were not officially presented to the conference. This was due to the fact that the committee report was about to be presented late in the conference and the further fact that time did not permit of discussion of its recommendations on car supply with transportation heads, which was suggested by Mr. Hoover as a courtesy to the railroad men.

The recommendations of the mining committee on bituminous coal follow:

1. As our bituminous coal deposits are ample and the developed mine capacity is far in excess of the country's bituminous coal requirements, therefore safeguarding the public's coal supply is mainly a question of car supply and transportation.

2. As the preferential car supply was permitted to exercise its evil influence in 1920 with most disastrous results to our people, your committee respectfully recommends that the Esch-Cummins Act be hereafter rigidly enforced to the end that there shall be no preferential use or assignment of railroad cars in the coal industry. This practice has been condemned as an evil by the Fuel Administration in 1918, by the Presidential Coal Commission in 1920, and is prohibited by the Esch-Cummins law, all recognizing that it results in reducing coal costs to users of the preferential fuel cars only, and thereby unduly increases the cost of coal to the remainder of the coal-consuming public who do not enjoy the use of the preferential car. It has the further baleful effect of increasing both unemployment and irregularity of employment at the mines not enjoying the use of the preferential fuel cars; all resulting in the unnecessary pyramiding of coal costs upon all coal consumers.

3. As an aid to present unemployment, as a substitute for the assigned car and to avert the peak load at bituminous coal mines, your committee therefore further recommends that this conference memorialize the Committee of Railroad Executives and ask that they gradually accumulate and maintain along their lines of railway throughout this country a quantity of bituminous coal sufficient to take care of their requirements for a period of at least five months, as that quantity should provide for their requirements over any reasonable emergency that may arise, and permit the remaining fuel consumers to fully employ our transportation facilities.

4. Your committee further recommends that this conference memorialize Congress to the effect that the railroads be paid all moneys now owing them by the Federal Government.

5. Your committee further recommends that the per-diem charge made by railroads for cars used off their lines be materially increased and enough so as to insure their prompt return to the owning railroad, thereby materially increasing transportation facilities.

Kohler Law Declared Unconstitutional; Test Case Will Go to Higher Court

JUDGE HENRY A. FULLER, of the Court of Common Pleas of Luzerne County, has rendered a decision in which he holds that the Kohler mine-cave law is unconstitutional. The test case was brought by H. J. Mahon and wife, of Pittston, who sought to restrain the Pennsylvania Coal Co. from mining under the home they own jointly.

"It is clear that the decision of this case on the facts and legal contentions," said the court in the opinion, "hinges strictly upon the narrow question whether the Legislature, in the exercise of so-called police power and in a case where the public interest is directly concerned, can constitutionally give to a private owner of surface the right of support against an owner of the underlying coal, thereby depriving the latter of right to mine it without leaving support, and thus abrogating the very contract by which the owner of the surface acquired from the owner of the coal.

"Owing to the intellectual limitations of our old-fashioned mind and sitting in a court of equity, which is presumed to follow the fundamental law even when it conflicts with the comfort and security of individuals, we must confess our inability to perceive in the facts in this case any legitimate claim of the plaintiffs to the relief prayed. Sure it is that they would have no standing without the aid of the statute; equally sure is it that the statute applied to the case stated in the bill impairs the obligation of a contract and for the benefit of one takes the private property of another without compensation, and by a corollary almost too obvious for discussion it follows that the plaintiffs' claim for relief involves palpable breach of fundamental law. We decide the matter at this stage and dissolve the injunction on the sole ground that the statute in application to this case involves a constitutional impairment of the contract accompanied by the taking of private property for private benefit without compensation."

The case, of course, will be appealed at once to the State Supreme Court. The decision has been no surprise to state officials who were interested in the companion mine-cave bills during the legislative session.

At the time of the passage of the bills it was generally understood at the Capitol that neither was constitutional. As a matter of political expediency both were passed finally, and as Governor Sproul had given his word that he would approve them if they ever reached him he signed both. Both the Fowler and the Kohler measures were scheduled to die. The House passed them finally with the general understanding that they would end in Senate committees, but the factional fight at the closing of the session upset many plans and as votes were needed for other measures the mine-cave bills finally were put through.

Kenyon Bills Likely to Die Soon; Strikes May Provoke Half-Baked Legislation

SINCE the Senate unmercifully squelched Senator Frelinghuysen's effort to obtain even a mild form of federal influence in the coal industry, there seems to be little chance for serious consideration of the Kenyon bills. Senator Kenyon has expressed himself as favoring the Frelinghuysen coal-stabilization bill as a step in the right direction, but the stride does not attain the length which he desires.

With the increasing probabilities of railroad and mine strikes it is recognized that sentiment may change quickly with regard to this type of legislation. At the present time practically all members of the Senate recognize that there is no undue spread between the price of coal at the mine and the price charged by the retailer. All branches of the coal trade have had to face such depressing influences during recent months that most of the profit has been squeezed from each handling of coal. It also is generally recognized on Capitol Hill that conscienceless profit taking in times of emergency is confined to a minority. It is clearly foreseen that the threatened transportation and mine strikes have in them the making of conditions which lend themselves to profiteering operations, and there is a general desire to find a way to curb these predatory elements in the coal trade. One of the dangers of the situation which is now in the making is that there will be half-baked legislation which will do more harm than good.

The anti-profiteering philosophy revealed by Senator Kenyon's bill puts a premium on small-scale business and penalizes those having the efficiency of quantity operation. The bill would discourage the opening of large low-cost properties and would make it more profitable to operate in small units, with the accompanying increase in costs.

Wholesalers' Association Recommends Cut In Freight Rates on Coal and Coke

EMPHASIZING the necessity of lower freight rates if the prices of coal and coke are to be lowered, the American Wholesale Coal Association, through its president, W. R. Coyle, sent a telegram Oct. 15 to the Association of Railway Executives, in session at Chicago.

"Our customers, the consumers of coal, are asking why their coal remains so high," the telegram said. "You and we know that coal has come down and that lower prices to them can come only with lower rates.

"A considerable rate reduction is the only move at this time which will gain the entire support of the public for a further wage reducton. When the American public knows the facts, there will be no danger from a national strike.

"The people are impatient over the delay in adjusting rates. We recommend that you announce at once a sweeping downward revision of the rates on all coal and coke. If necessary, we recommend that you announce a further reduction in wages to take effect simultaneously with the new rate schedule. It is our opinion that such an announcement immediately made by you will be a great aid to business revival, as coal is an important factor in the operaton of every factory and a necessity in the heating of every home."

Howat, Suspended from Union, Would Form Rival Labor Organization

EVENTS follow fast the declaration on Oct. 13, by John L. Lewis, president of the United Mine Workers of America, that Alexander M. Howat, district president in Kansas, be suspended from office and replaced by George L. Peck, a member of the executive board, whom he himself had suspended. Thomas Harvey, the ousted secretary-treasurer, is re-established in office.

The biennial convention recently held in Indianapolis ordered Howat to tell the striking miners of certain Kansas mines to go back to work. Howat refused to comply with the order. Concurrently he and August Dorchy, the vice-president of the district, were given a six months' jail sentence in the Cherokee County jail at Columbus, Kan., for violating the criminal section of the Industrial Court Law by calling strikes. Practically all the mine workers of Kansas quit work in protest against this imprisonment.

Howat left John Fleming, a lieutenant in sympathy with him, in entire charge of the situation, and on Oct. 15 Fleming announced the formation of a rival organization. Peck meanwhile is trying to get the men back to work.

Fleming asserts that the "rump" union will extend its operations in Illinois, where there are many disgruntled union men. The hard fight between the administration and Frank Farrington, Illinois district president, will long be remembered. Frank Farrington has been an insurgent within the union for years, and forces favorable to a disruption of the union are to be found all over that state.

W. E. Freeman, president of the Kansas Federation of Labor, appealed on Oct. 14 to the local unions of every kind to come to the support of the southern Kansas miners and described Lewis' order suspending the district officers as "traitorous desertion."

Operators report that 1,500 Kansas miners who had been idle since Howat and Dorchy went to jail returned to work Oct. 17.

Injunction Granted U. M. W. A. in Illinois Conflicts with Federal Case in Indiana

TAKING the coal operators of Illinois by surprise the judge of the Circuit Court of Franklin County, Illinois, has issued a writ of temporary injunction asked by the United Mine Workers of America, enjoining all operators and all associations in the state from "declaring the existence of the Twelfth District union unlawful, from in any way interfering with collecting the check-off, from in any way interfering with the union, from abandoning the check-off, from interfering with peaceful persuasion of miners to join the union and from in any manner treating the funds of the union as illegal accumulation." The effect of this injunction is exactly contrary to the contentions of the Government in the case before Judge Anderson, of Indianapolis, which declares the check-off illegal. This leaves Illinois operators in a quandary as to whether to conform to the contention of the state or the Federal court. The operators have arranged to meet in Chicago, Thursday, Oct. 20, to formulate a policy. It is not expected that they will oppose the ruling but let it alone. Some favor fighting it.

F. R. Wadleigh to Direct Coal Division of Bureau of Commerce

IN REORGANIZING the Bureau of Foreign and Domestic Commerce on a commodity basis, the selection by Secretary Hoover of F. R. Wadleigh to head the coal division of the bureau is especially timely. Mr. Wadleigh, an expert in matters pertaining to export coal markets, will direct the foreign staff of the bureau, interpreting the needs of the coal industry, and will develop the material received. In joining the bureau Mr. Wadleigh resigned his position as assistant to the president of the Tuttle Corporation, New York City. Prior to that connection he was with the Weston Dodson Co. and during the war served with the Central Bureau of Planning and Statistics in Washington as consulting engineer on coal.

District Convention Will Try to Induce Glen Alden to Operate Idle Mines

THE executive board of District No. 1 of the northern anthracite field on Oct. 11 issued a call for a district convention to meet in Scranton Oct. 24, to see if some means could be devised to persuade the Glen Alden Coal Co. to open six collieries now idle as the result of the Kohler Law. A strike vote is predicted. Probably, however, the mine workers will hesitate before officially committing themselves to such a violation of their contracts.

Committee of National Coal Association Indorses Plan To Lease Shipping Board Vessels for Coal Export

SECRETARY of Commerce Hoover has suggested to the Shipping Board that it lease idle vessels to coal exporters at $1 per month per vessel in order to provide employment at the mines and to increase the export trade. The Shipping Board announces that it will put the plan into effect if the idea is approved by private shipowners, to whom the matter will be presented by Secretary Hoover.

No agreement is yet in sight in regard to this proposal. Discussions between Secretary Hoover, Shipping Board officials and representatives of the operators are continuing. The following is from a memorandum referred to Mr. Hoover and the Shipping Board by a sub-committee of the Foreign Trade Committee of the National Coal Association:

"This committee has had under consideration for a long time the general bituminous coal export trade of the United States, and while most of those appearing before you this morning represent shippers from the Eastern coal fields, we feel that our remarks pertaining to the subject are representative of the views of those interested in all coal fields from which coal can be exported.

"We are of the opinion that outside of a very small number who have recently engaged in the general coal and shipping business very few of our people realize the vital need of this particular trade to the nation. It is of unusual importance today because of the position occupied by the United States as a result of the re-establishment of her merchant marine.

"There are no two lines of trade activity in England that are so closely allied as the shipping and coal interests. The greatest merchants and minds of England are actively identified with these branches of trade, and in many cases shipping controls coal, and vice versa.

Export Market Natural Outlet for Surplus Coal

"If our mines are to be fully operated, giving employment to the maximum number of men that can be worked therein, furnishing the maximum freight to the railroads, taking the maximum amount of supplies of all kinds directly or indirectly affected by coal mining, increasing business activity to the utmost, some market must be developed for the surplus, and the only market available is the export trade. Without it the mines cannot be operated to anything like their capacity, nor can the merchant marine successfully compete with England. We cannot use the foreign buyers as a convenience. If we are to develop our export trade it must be done in a businesslike way and therefore it must be constant, and active efforts must be made to enlarge it.

"We are today in active competition with England, and our merchant marine is seriously involved. We think that we can make the statement without fear of contradiction that without a foreign coal trade the merchant marine cannot be operated successfully.

"Our interests have been seriously militated against by the manner in which a large part of the business was handled during the last year due to the abnormal demand both at home and abroad, so that it is going to be very difficult for us to overcome the prejudice against American exporters, and unless we are in a position to assure our foreign friends that we are in the business to stay, and that we will and can meet English competition, and that they can rely on us at all times, they will come to America only in the event they are unable to secure their supplies elsewhere.

"The coal operators who were seriously engaged in the exportation of coal recognized the seriousness of their position in foreign markets, and many of them have expressed a willingness to continue their efforts, even though they are obliged to take less than the cost of production for their coal, but the difference is so great that even this will not enable us to stay in the market. We must have some assistance or the American coal export trade will be irretrievably lost except in times of worldwide shortage. We have the coal, we have the facilities, we have the banking connections, in fact we have everything but the things that are absolutely vital for the promulgation of this trade, and that is cheap transportation. It seems to us that the importance of this business is so paramount that some arrangements should be made whereby the Shipping Board or the Emergency Fleet Corporation can make rates on coal that will enable coal operators to compete in foreign markets.

"We are not unmindful of the fact that the rates that would be necessary to enable us to do this will result in a loss in the operation of American vessels, but we believe that a smaller loss will be sustained by keeping the vessels in operation than by allowing them to stand idle.

"We have a long way to go before we can have any definite permanent export coal trade on which to rely, and we do not believe that the importance of this trade to our merchant marine can be exaggerated, and, therefore, we must consider from every possible angle if there is not some way in which we can all assist to the end that the trade will be encouraged and helped, as without it, regardless of the general resumption in other lines of business, our merchant marine cannot be possibly made effective to the general welfare of the nation. We have the merchant marine, and we must now devote ourselves to securing the trade so vital to its operation."

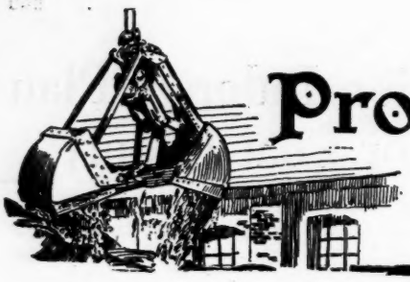
John Lewis Advocates Government Credit to Workers as Unemployment Aid

EXTENSION of government credit to working men and women as an emergency relief measure in unemployment crises is advocated in a statement given to the press by John L. Lewis, president of the United Mine Workers. Government credits are being used for the benefit of the farmers, the railroads and exporters, says Mr. Lewis, and he argues that it would be sound public policy to extend similar assistance to workers temporarily out of jobs. That it is not an extreme or revolutionary proposal, he says, is shown by the fact that the British Government has recently decided upon a similar measure of emergency relief.

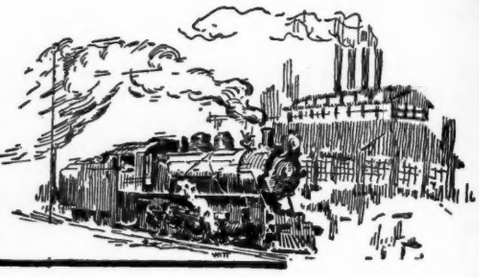
"These credits by the most extreme estimates could not reach a total in excess of two and a half billion dollars," Mr. Lewis asserts. "Less than 10 per ce of the available credits of the banking system of the country would, therefore, be absorbed. By interest adjustments or commission charges all expense to the government would be eliminated. Through the availability of these credits the self-respect and dignity of the worker would be maintained. By the use of the credits, the purchasing power of our people would be greatly expanded, and this in turn would revivify trade and industry and reduce unemployment. With a return to normal conditions the loans could be repaid without great inconvenience.

"Credit has thus been extended to the farmer, the producer of raw materials, and to the exporter. Labor is our most important factor in production, and the success of our self-governing republic and our democratic institutions and ideals is fundamentally dependent on the living standards and economic welfare of our workers. The success of industry and trade, as well as public policy itself, therefore, point to the wisdom of these credits."

As further measures of relief for the unemployment evil Mr. Lewis recommends in his statement that every corporation, firm or individual engaged in interstate commerce be required to build up a reserve labor fund equal to one-half its annual payroll, this fund to be used to pay the wages of employees who would otherwise be dropped for lack of work in slack times, and he also urges a governmental investigation to determine the relation between labor costs and profits.



Production and the Market



Weekly Review

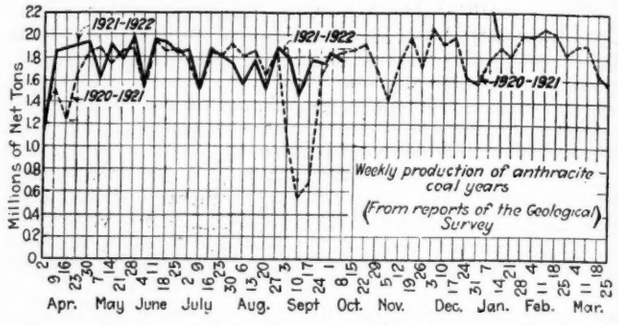
GRATIFYING signs of returning interest in the market have been shown this week by bituminous coal consumers. Buying everywhere is confined to small lots but that more coal is moving as the season progresses is shown by the report of the Association of Railway Executives, which says that on Oct. 1 there were only 98,048 surplus coal cars in the country, or a reduction of 12,328 compared with the week previous.

Railroads are issuing warnings of an impending shortage of equipment should the movement increase much further. The Pennsylvania is trying to rent 2,000 coal cars for use on its lines and the B. & O. mines are facing an early return of "car rationing" in view of the increase in coal traffic.

Consumers Discount Chances of Real Rail Tie-Up

Labor occupies the limelight today. The announcement of the rail union leaders ordering a strike effective Oct. 30 has caused no little anxiety on the part of all buyers. Prior to this notice the consumer had discounted the probability of a real rail tie-up but the action of the labor chiefs doubtless will send many buyers into the immediate market for protection. At the same time the consumer will not buy heavily. Hand-to-mouth purchases are the order of the day. The prospect of lower freights to come is so alluring that coal receipts will be kept to the lowest tonnage commensurate with actual current requirements.

Prices are more stable. Reports from all sections indicate a greater degree of firmness in quotations, and while screenings are still heavy where domestic production is strong, there has been a decided strengthening from the "distress" position of last week. Non-union mines are benefiting more from the increased ordering than union operations. This is shown in the Pittsburgh district, where, except for gas coal, the market is unimproved. Eastern Ohio reflects the improvement in the steel and tube industry. The domestic market is strong in the Midwest while cotton mills and allied industries in the South are taking more coal. *Coal Age* Index of spot prices was 90 on Oct. 17 as compared with 89 on Oct. 10.


1921-1922
1920-1921
1921-1922
1920-1921
Millions of Net Tons
Weekly production of anthracite coal years
(From reports of the Geological Survey)
Apr. May June July Aug. Sept Oct. Nov. Dec. Jan. Feb. Mar.

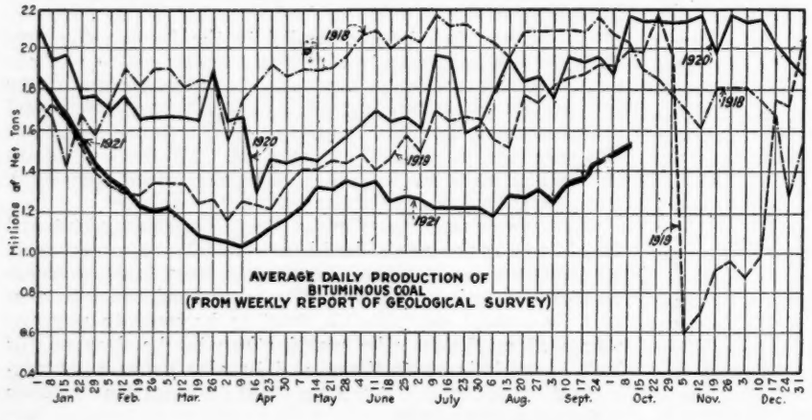
Demand for anthracite domestic sizes continues to increase with the cooler weather. As in bituminous, however, the householder is buying in smaller lots and distribution will be spread over a longer period than in normal times. The steam trade also is improving, especially in the buckwheats.

The recent increase in beehive coke production has proven too strong for the existing demand. Buying by the furnaces has not been up to anticipation and prices have suffered accordingly since the recent stiffening reported last week.

BITUMINOUS

Production continues to improve. The output during the week ended Oct. 8 was 9,105,000 net tons, according to the Geological Survey. This is the first time since last January that the weekly production has passed the 9,000,000-ton mark. When compared with the preceding week, this is an increase of 222,000 tons. Loadings for the first two days of the following week—Oct. 10-15—indicate a further increase in production.

The export markets continue inactive, due to the general industrial depression and also to the strong British competition in foreign markets. The English coal industry, how-



Estimates of Production

(Net Tons)

Week Ended	1921	1920
BITUMINOUS COAL		
Sept. 24 (*b*)	8,527,000	11,851,000
Oct. 1 (*b*)	8,883,000	11,350,000
Oct. 8 (*a*)	9,105,000	12,103,000
Daily average	1,517,000	2,017,000
Calendar year	306,457,000	412,039,000
Daily average, calendar year	1,291,000	1,732,000
ANTHRACITE		
Sept. 24	1,754,000	1,701,000
Oct. 1 (*b*)	1,832,000	1,855,000
Oct. 8 (*a*)	1,793,000	1,898,000
Calendar year (*a*)	69,324,000	67,791,000
BEEHIVE COKE		
Oct. 1 (*b*)	78,000	376,000
Oct. 8 (*a*)	80,000	400,000
Calendar year	4,192,000	16,470,000

(*a*) Subject to revision. (*b*) Revised from last report.

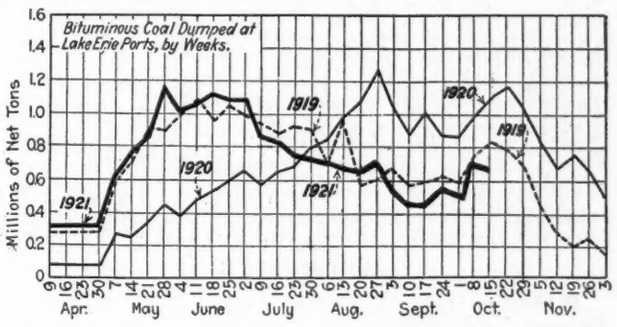
ever, is now faced with the necessity of a return to a more economic basis of operation, which will either result in a curtailment of production or an increase in prices. A line of inquiry for American coals is already developing which should lead to a resumption of the European and South American trading that has been markedly lacking of late.

Hampton Roads shippers are actively canvassing the New England outlet but stocks are heavy in that section and the only buyers are those who have delayed putting in a seasonal reserve. Dumpings at the piers for all accounts during the week ended Oct. 13 were 209,698 gross tons as compared with 146,350 the preceding week. September dumpings at all piers were 2,413,000 net tons. Exports were 88 per cent less than in June, the high point of the year.

TIDEWATER BITUMINOUS COAL SHIPMENTS FOR SEPTEMBER, 1921
(In Net Tons)

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total
Coastwise to New England	85,000	43,000	91,000	590,000	.....	809,000
Exports	.....	12,000	37,000	153,000	8,000	210,000
Bunker	263,000	24,000	31,000	171,000	3,000	492,000
Inside capes	.....	157,000	96,000	26,000	.....	279,000
Other tonnage	569,000	.....	.....	51,000	3,000	623,000
Total	917,000	236,000	255,000	991,000	14,000	2,413,000

Buying is gaining momentum in the Northwest and the cargo movement is due for a last minute rush, that shippers may avail themselves of the seasonal rate from the mines which expires Oct. 31. However, the Wheeling & Lake Erie and the Bessemer & Lake Erie roads announce that they will not cancel their low tariffs on that date. A reduction of 28 per cent in the freight rates on iron ore, effective at once and continuing until Dec. 31, will stimulate the movement of cargoes down the Lake. Dumpings of coal were 673,023 net tons in the week ended Oct. 10—648,876 tons cargo and 24,147 tons vessel fuel—as compared with 752,652 tons the week before. Cumulative tonnage for the season now stands at 20,268,823; in 1920 it was 18,471,593.



The rail strike may not materialize nationwide but instead be a series of outlaw tie-ups affecting terminals. Industries will be hampered, not so much by lack of fuel, as by inability to market their products.

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

Low-Volatile, Eastern	Market Quoted	Sept. 13, 1921	Oct. 4, 1921	Oct. 10, 1921	Oct. 17, 1921†
Pocahontas lump	Columbus	$5.20	$4.75	$4.75	*$4.25@$4.75*
Pocahontas mine run	Columbus	3.15	2.80	2.75	*2.40@ 2.85*
Pocahontas screenings	Columbus	2.45	2.10	2.05	*1.75@ 2.15*
Pocahontas lump	Chicago	4.95	4.75	4.75	4.50@ 5.00
Pocahontas mine run	Chicago	3.10	2.65	2.60	**2.25@ 3.50**
*Smokeless mine run	Boston	5.00	4.90	4.85	4.75@ 4.90
Clearfield mine run	Boston	1.95	1.95	1.95	1.75@ 2.15
Cambria mine run	Boston	2.35	2.35	2.40	**2.10@ 2.75**
Somerset mine run	Boston	1.75	1.80	1.85	**1.60@ 2.15**
Pool 1 (Navy Standard)	New York	3.40	3.25	3.15	**3.15@ 3.35**
Pool 1 (Navy Standard)	Philadelphia	2.95	3.10	3.10	**3.00@ 3.30**
Pool 1 (Navy Standard)	Baltimore	2.90	2.80	2.75	**2.75@ 3.00**
Pool 9 (Super. Low Vol.)	New York	2.60	2.45	2.40	**2.40@ 2.60**
Pool 9 (Super. Low Vol.)	Philadelphia	2.35	2.40	2.40	**2.25@ 2.60**
Pool 9 (Super. Low Vol.)	Baltimore	2.50	2.65	2.45	2.35@ 2.50
Pool 10 (H. Gr. Low Vol.)	New York	2.30	2.15	2.15	**2.00@ 2.40**
Pool 10 (H. Gr. Low Vol.)	Philadelphia	2.05	2.05	2.05	**2.00@ 2.25**
Pool 10 (H. Gr. Low Vol.)	Baltimore	2.20	2.45	2.30	*2.00@ 2.35*
Pool 11 (Low Vol.)	New York	2.15	1.90	1.80	**1.65@ 2.00**
Pool 11 (Low Vol.)	Philadelphia	1.80	1.85	1.85	**1.75@ 2.00**
Pool 11 (Low Vol.)	Baltimore	2.00	2.20	2.10	*1.90@ 2.10*
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.90	1.90	1.75	1.60@ 1.95
Pool 54-64 (Gas and St.)	Philadelphia	1.70	1.75	1.75	1.65@ 1.85
Pool 54-64 (Gas and St.)	Baltimore	1.70	1.90	1.85	*1.60@ 1.85*
Pittsburgh sc'd gas	Pittsburgh	2.65	2.65	2.65	2.55@ 2.75
Pittsburgh mine run (St.)	Pittsburgh	2.25	2.20	2.20	2.20@ 2.25
Pittsburgh slack (Gas)	Pittsburgh	1.70	2.15	2.15	*1.85@ 2.00*
Kanawha lump	Columbus	3.45	3.25	3.20	3.00@ 3.35
Kanawha mine run	Columbus	2.15	2.00	1.95	**1.90@ 2.20**
Kanawha screenings	Columbus	1.30	1.20	1.20	*0.90@ 1.25*
Hocking lump	Columbus	3.20	3.25	3.20	3.00@ 3.40
Hocking mine run	Columbus	2.15	2.00	2.00	1.90@ 2.15
Hocking screenings	Columbus	1.25	1.10	1.05	*0.90@ 1.05*
Pitts. No. 8 lump	Cleveland	3.25	3.25	3.25	.....
Pitts. No. 8 mine run	Cleveland	$2.25	$2.05	$2.20	*$2.10@$2.20*
Pitts. No. 8 screenings	Cleveland	1.60	1.55	1.55	1.50@ 1.60
Midwest					
Franklin, Ill. lump	Chicago	3.65	3.65	3.80	**3.50@ 4.30**
Franklin, Ill. mine run	Chicago	2.95	2.75	2.70	**2.40@ 3.25**
Franklin, Ill. screenings	Chicago	1.95	1.70	1.40	*0.85@ 1.00*
Central, Ill. lump	Chicago	2.70	2.50	2.50	2.00@ 3.00
Central, Ill. mine run	Chicago	2.40	2.25	2.25	1.75@ 2.75
Central, Ill. screenings	Chicago	1.65	1.45	1.45	*0.60@ 1.75*
Ind. 4th Vein lump	Chicago	2.95	2.90	2.95	2.35@ 3.50
Ind. 4th Vein mine run	Chicago	2.55	2.55	2.55	*2.25@ 2.75*
Ind. 4th Vein screenings	Chicago	1.70	1.55	1.50	**1.00@ 2.15**
Ind. 5th Vein lump	Chicago	2.90	2.70	2.70	2.15@ 3.25
Ind. 5th Vein mine run	Chicago	2.50	2.50	2.50	2.25@ 2.75
Ind. 5th Vein screenings	Chicago	1.75	1.45	1.45	0.70@ 2.15
Standard lump	St. Louis	2.65	3.25	3.40	3.25@ 3.50
Standard mine run	St. Louis	1.95	1.85	1.85	*1.75*
Standard screenings	St. Louis	0.75	0.35	0.55	**0.50@ 0.65**
West. Ky. lump	Louisville	2.75	3.00	2.95	**2.75@ 3.50**
West Ky. mine run	Louisville	2.25	2.25	2.25	**2.00@ 2.60**
West Ky. screenings	Louisville	1.30	1.15	1.30	**1.00@ 1.75**
South and Southwest					
Big Seam lump	Birmingham	3.75	3.75	3.75	3.25@ 4.25
Big Seam mine run	Birmingham	2.15	2.15	2.15	2.00@ 2.30
Big Seam (washed)	Birmingham	2.40	2.30	2.30	2.15@ 2.40
S. E. Ky. lump	Louisville	3.50	3.55	3.65	**3.50@ 4.00**
S. E. Ky. mine run	Louisville	2.15	2.10	2.20	**2.25@ 2.35**
S. E. Ky. screenings	Louisville	1.50	1.25	1.25	1.00@ 1.50
Kansas lump	Kansas City	5.75	5.75	....	.....
Kansas mine run	Kansas City	4.25	4.00	....	.....
Kansas screenings	Kansas City	2.50	2.40	....	.....

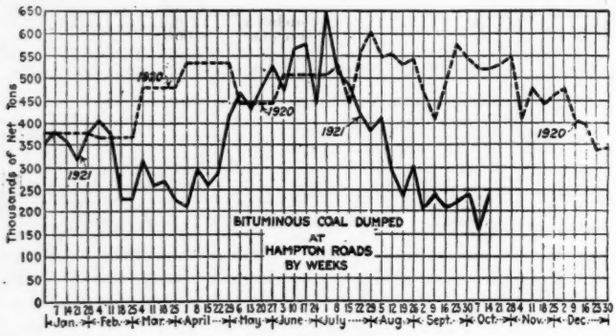
*Gross tons, f.o.b. vessel, Hampton Roads.
†Advances over previous week shown in **heavy type**, declines in *italics*.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

	Market Quoted	Freight Rates	Oct. 4, 1921 Independent	Oct. 4, 1921 Company	Oct. 10, 1921 Independent	Oct. 10, 1921 Company	Oct. 17, 1921† Independent	Oct. 17, 1921† Company
Broken	New York	$2.61	.....	$7.60@$7.75	.....	$7.60@$7.75	.....	$7.60@$7.75
Broken	Philadelphia	2.66	$7.60@$8.20	7.75@ 7.85	$7.60@$8.20	7.75@ 7.85	$7.60@$8.20	7.75@ 7.85
*Broken	Chicago	5.63	13.40	12.80	13.40	12.80	13.40	12.80
Egg	New York	2.61	7.75@ 8.00	7.60@ 7.75	7.75@ 8.00	7.60@ 7.75	**7.75@ 8.25**	7.60@ 7.75
Egg	Philadelphia	2.66	8.10@ 8.35	7.75@ 7.85	8.10@ 8.35	7.75@ 7.85	8.10@ 8.35	7.75@ 7.85
*Egg	Chicago	5.63	13.40	12.80	13.40	12.80	13.40	12.80
Stove	New York	2.61	8.25@ 8.75	7.90@ 8.10	8.50@ 8.75	7.90@ 8.10	8.50@ 8.75	7.90@ 8.10
Stove	Philadelphia	2.66	8.25@ 8.75	8.00@ 8.35	8.25@ 8.75	8.00@ 8.35	8.25@ 8.75	8.00@ 8.35
*Stove	Chicago	5.63	13.40	12.90	13.40	12.90	13.40	12.90
Chestnut	New York	2.61	8.00@ 8.50	7.90@ 8.10	8.25@ 8.50	7.90@ 8.10	8.25@ 8.50	7.90@ 8.10
Chestnut	Philadelphia	2.66	8.20@ 8.75	8.05@ 8.25	8.00@ 8.50	8.05@ 8.25	8.00@ 8.50	8.05@ 8.25
*Chestnut	Chicago	5.63	13.40	12.90	13.40	12.80	13.40	12.80
Pea	New York	2.47	5.00@ 5.50	6.05@ 6.45	5.00@ 5.50	6.05@ 6.45	**5.25@ 5.75**	6.05@ 6.45
Pea	Philadelphia	2.38	4.50@ 5.50	6.15@ 6.25	4.50@ 5.50	6.15@ 6.25	**4.75@ 5.50**	6.15@ 6.25
*Pea	Chicago	5.63	12.40	11.15	12.40	11.15	12.40	11.15
Buckwheat No. 1	New York	2.47	2.75@ 3.00	3.50	3.00@ 3.25	3.50	3.00@ 3.25	3.50
Buckwheat No. 1	Philadelphia	2.38	2.50@ 3.00	3.50	2.75@ 3.00	3.50	2.75@ 3.00	3.50
Rice	New York	2.47	1.80@ 2.15	2.50	2.00@ 2.25	2.50	**2.00@ 2.40**	2.50
Rice	Philadelphia	2.38	1.75@ 2.00	2.50	1.75@ 2.00	2.50	1.75@ 2.00	2.50
Barley	New York	2.47	1.25@ 1.50	1.50	1.25@ 1.50	1.50	1.25@ 1.50	1.50
Barley	Philadelphia	2.38	1.00@ 1.25	1.50	1.00@ 1.25	1.50	1.00@ 1.25	1.50
Birdseye	New York	2.47	.....	2.50	.....	2.50	.....	2.50

*Prices and freight rates, net tons; quotations f.o.b. cars, Chicago.
†Advances over previous week shown in **heavy type**, declines in *italics*.

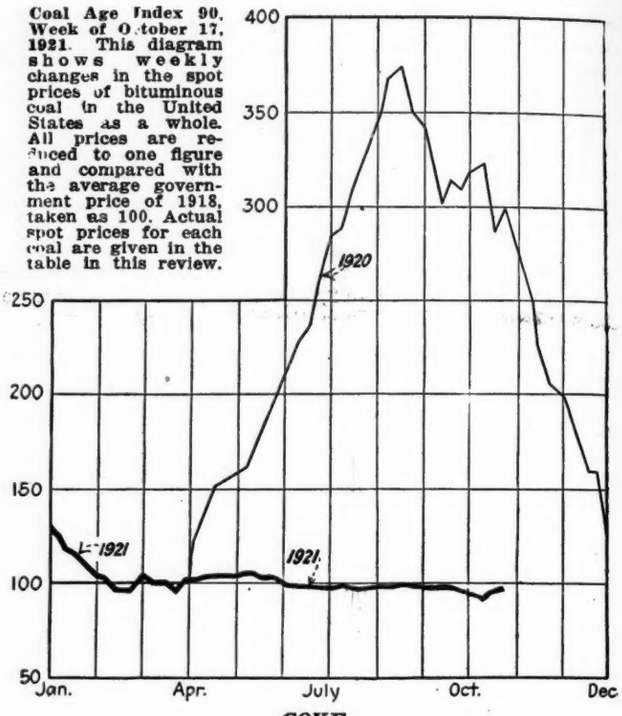
All-rail movement to New England is hard hit by the continued hammering of the Southern coals via the coastwise route. The movement over the Hudson during the week ended Oct. 8 was 2,595 cars, 300 less than in the preceding week.


Thousands of Net Tons
1920
1921
BITUMINOUS COAL DUMPED AT HAMPTON ROADS BY WEEKS
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.

ANTHRACITE

Production remained steady during the first week in October. According to the Geological Survey the output was 1,793,000 net tons. September shipments, as reported to the Anthracite Bureau of Information, were 5,519,412 gross tons, against 5,575,115 in August. Inability to operate certain mines in the Scranton district under the provisions of the Kohler Act caused a loss of more than 200,000 tons, most of which was offset by increased shipments from other districts.

Stove coal leads the demand and dealers accept orders for this size when accompanied by permission to ship egg and nut also. Steam sizes are in moderate demand. The Lake movement is holding remarkably well; it was 103,240 net tons in the week ended Oct. 12 as compared with the preceding week's tonnage of 70,400.


Coal Age Index 90, Week of October 17, 1921. This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1918, taken as 100. Actual spot prices for each coal are given in the table in this review.
1920
1921
1921
Jan. Apr. July Oct. Dec.

COKE

Production of behive coke increased but 2,000 tons to 80,000 tons in the week ended Oct. 8. The possibility of lower freights has ben an influence to postpone the relighting of blast furnaces and the Connellsville region has not made further headway in regaining production.

Foreign Market And Export News

Coal Paragraphs From Foreign Lands

GERMANY—Ruhr production during the week ended Oct. 1 was 1,778,000 metric tons, according to a cable to *Coal Age*, or an increase of 20,000 tons over the preceding week.

Prices of coal on the Upper Silesian market have been raised as follows: all coarser sorts by 42.80 marks; smalls by 31.40 marks; Ratterklein by 24.50 marks and washed dust by 3 marks per ton. The price for ordinary dust remains unchanged.

Provisional figures of the Ruhr production in August show 8,130,000 tons, as compared with 7,780,000 tons in July. Apparently the average daily output increased from 299,300 tons in the latter month to 301,300 tons in August.

ITALY — Cardiff steam firsts are quoted at 43s. 6d. on the Genoa market, according to a cable to *Coal Age*. American coal is not quoted.

INDIA — Stocks in the hands of dealers are considerable. Bengal coal is 35 rupees per ton. Welsh is quoted at 45s. and African at 55s. c.i.f. Bombay. The market is dull. The import of foreign fuels into India has precipitated a slump in the price of the Bengal coal. To remedy the situation they suggest that the existing embargo on the export of Indian coal to foreign ports should be withdrawn.

SOUTH AFRICA—A crisis has arisen regarding exporting of coal from South Africa because of the delivery of Welsh coal at East African, Indian and South American ports at prices which render competition impossible owing to the South African railway rates. Only Transvaal collieries are at present returning reasonable dividends, and today the majority of the operations are in much the same position as the low grade mines.

The Railways Board announces reductions in the rates for bunker coal, effective Jan. 1, 1922, of 4s. 6d. per net ton to Durban and Lourenco Marques and 5s. 6d. for Cape ports. On Oct. 1 a reduction was also made of 1s 3d. to Lourenco Marques and Union ports for export cargo coal and coal used in bunkering of ships carrying full cargoes of export coal.

SPAIN—The Tariff Commission has held a sitting for the discussion of the proposed duties on mineral combustibles and has decided to re-estblish the former duty of 3.75 pesetas on coal. The present prices for Austrian coal are: Screened, 100 pesetas; large, 95, and small, 75@80. The freight from Gijon to Barcelona is still round about 17 pesetas per ton.

Spanish coal owners are still uneasy owing to competition on the part of Great Britain, especially in view of the fact that the Spanish industries are giving fewer orders than usual. The great problem is the increased cost of production, due to the smaller output of the individual miner; in the Asturias the output per miner has increased somewhat lately, but not enough to make up for the rise in wages.

INDO-CHINA — Annual production in Indo-China averages about 650,000 tons, of which some 350,000 tons are exported. The greater portion of this output is furnished by mines of Hongay, in Tongking, in close proximity to the port of Haiphong. This coal finds a market even in Japan. In a recent article in the Saigon press the writer affirmed that Indo-China coal would in time completely oust English coal from Far Eastern markets and would successfully compete with that produced in China and Japan.

Commerce Reports, No. 6, Oct. 10, 1921, contains an article on the market for coal in Finland and statistics of Czechoslovakian and German production.

French Railway Orders Cheap Coal in England

British Protection Declines Nearly 160,000 Tons and Export Business Is Below Expectations—September Dumpings at Hampton Roads Lowest Since December, 1919

Quotations on the Marseilles market, according to a cable to *Coal Age*, are: Best Welsh, 52s., American, $14.

The output of coal in France, including the Sarre region, during August was 3,385,523 metric tons. Mine stocks of coal, including the Sarre, at the end of that month amounted to 1,775,000 tons.

The French Midi Ry. has ordered 60,000 tons of admiralty steam (second) from British producers, delivery over twelve months, commencing Nov. 1, on a price basis of 25s. The French navy has purchased a like amount of admiralty large to be delivered by Dec. 31, 1921, at 120 fr. c.i.f. Toulon or 90 fr. c.i.f. Brest. Home coals have not improved their position.

Another purchase has been made by the French Midi Ry. of 100,000 tons of Durham unscreened at 18s.@19s. f.o.b. shipping point. Delivery will be made over 1922.

British Export Trade Unsatisfactory

Production in the United Kingdom during the week ended Oct. 1 was 4,114,000 gross tons, ac compared with 4,273,900 in the week preceding, according to a cable to *Coal Age*.

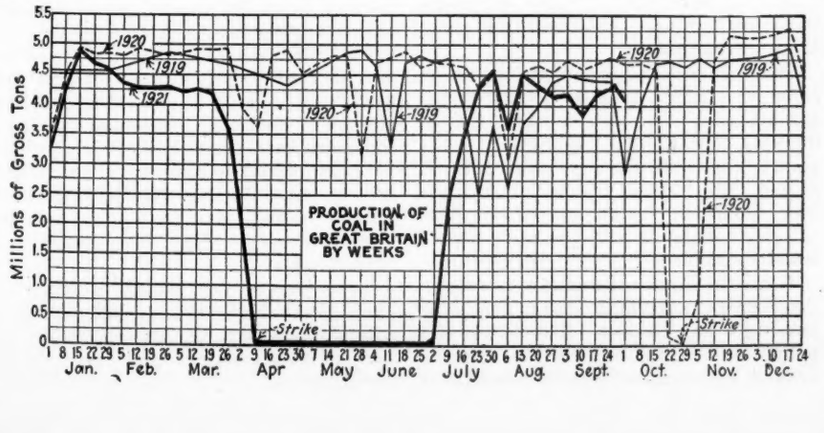
Cardiff exporters have fixed a rate to Buenos Aires of 20s. 5d. and to Rosario of 21s., being an increase of 6s. per ton. Homeward freights from the Plate have fallen so heavily—the present basis of between 22s. 6d. and 25s. per ton is just half that ruling three months ago for immediate shipment—that owners are disinclined to dispatch vessels to South America without greater inducement than has been offered lately.

The export trade is not proceeding as satisfactorily as was anticipated. Foreign markets feel the adverse exchange and the Eastern demand, which has been a recent feature, is now less active. Some Russian business is being done but shippers are cautious in taking orders because of the extremely poor port facilities.

In August 3,103,207 tons of coal were exported, as compared with 1,847,403 tons in August, 1920. The total export for the eight months amounted to 9,944,975 tons, as against 18,375,932 tons in the corresponding period of last year. The average value per ton of the coal exported in August was 36s. 6.4d. The *Colliery Guardian* publishes the following comparative statement of exports for the month and calendar year to date, 1913 and 1921:

Exported to	All Coal Quantity (Tons) August 1913	August 1921
Russia	769,794	50,281
Sweden	379,475	160,089
Norway	154,887	103,312
Denmark	248,746	287,110
Germany	798,177	124,524
Netherlands	168,862	248,646
Belgium	148,132	45,964
France	946,378	715,021
Portugal	78,225	80,778
Azores and Madeira	17,699	.....
Spain	180,505	116,992
Canary Islands	79,342	18,427
Italy	665,618	380,241
Austria-Hungary	54,286	.....
Greece	36,080	18,524
Algeria	116,754	53,223
French West Africa	10,136	3,714
Portuguese West Africa	13,390	14,248
Chile	21,039	186
Brazil	111,504	10,520
Uruguay	72,006	10,947
Argentine Republic	290,741	15,134
Channel Islands	16,004	13,797
Gibraltar	29,161	49,810
Malta	39,292	65,659
Egypt	196,796	114,825
Anglo-Egyptian Sudan	.....	.....
Aden and Dependencies	17,684	12,455
British India	10,057	53,439
Ceylon	7,037	100
Other countries	131,355	194,241
Total	5,819,152	3,103,207
Total: Anthracite	231,590	190,623
Total: Steam	4,197,809	2,181,765
Total: Gas	962,574	539,836
Total: Household	137,375	19,401
Total: Other sorts	289,814	111,582
Coke—Gas	113,423	20,636
Coke—Other sorts	.....	18,635
Manufactured fuel	140,278	153,176

	First Eight Months of 1913	1921
Total: Anthracite	1,934,680	570,451
Total: Steam	35,288,362	7,220,711
Total: Gas	7,587,554	1,725,508
Total: Household	1,160,811	57,586
Total: Other sorts	2,349,201	370,719
Total	48,320,608	9,944,975
Coke—Gas	712,698	239,913
Coke—Other sorts	.....	84,977
Manufactured fuel	1,363,324	394,819



Pier and Bunker Prices, Gross Tons

(Foreign Bunker Quotations by Cable to Coal Age)

	Oct. 8	Oct. 15†
PIERS		
Pool 9, New York	$5.75@$5.85	**$5.75@$6.00**
Pool 10, New York	5.45@ 5.60	**5.50@ 5.65**
Pool 9, Philadelphia	5.80@ 6.00	5.80@ 6.00
Pool 10, Philadelphia	5.40@ 5.70	**5.50@ 5.70**
Pool 71, Philadelphia	6.00@ 6.25	6.00@ 6.25
Pool 1, Hamp. Rds.	4.85@ 5.00	**4.90@ 5.00**
Pools 5-6-7 Hamp. Rds.	4.25@ 4.50	*4.25@ 4.40*
BUNKERS		
Pool 9, New York	6.10@ 6.20	6.10@ 6.20
Pool 10, New York	5.85@ 5.95	*5.80@ 5.90*
Pool 9, Philadelphia	5.80@ 5.90	5.80@ 5.90
Pool 10, Philadelphia	5.75@ 6.00	5.75@ 6.00
Pool 71, Baltimore	6.10@ 6.25	6.10@ 6.25
Pool 1, Hamp Rds.	4.95@ 5.10	**5.00@ 5.15**
Pool 2, Hamp. Rds.	4.65@ 4.85	**4.75@ 4.90**
Welsh, Gibraltar	47s. 6d. f.o.b.	47s. 6d. f.o.b.
Welsh, Rio de Janeiro	65s. f.o.b.	65s. f.o.b.
Welsh, Lisbon	57s. 6d. f.o.b.	57s. 6d. f.o.b.
Welsh, La Plata	60s. f.o.b.	60s. f.o.b.
Welsh, Madeira	52s. 6d. f.a.s.	52s. 6d. f.a.s.
Welsh, Teneriffe	52s. 6d. f.a.s.	52s. 6d. f.a.s
Welsh, Genoa	55s. t.i.b.	55s. t.i.b.
Durham, Newcastle	35s.@37s.	35s.@37s.
Belgian, Antwerp	110 fr.	110 fr.

C.I.F. Prices, American Coal

(In Gross Tons)

	—Oct. 8— Low Vol.	High Vol.	—Oct. 15†— Low Vol.	High Vol.
French Atlantic	$8.80	$8.40	$8.80	*$8.35*
United Kingdom	9 00	8.70	*8.95*	**8.75**
West Italy	9 00	8.70	*8.85*	*8.60*
Scandinavia	9 80	9.70	9.80	*9.40*
West Indies	....	....	6 80	6.30

These quotations are purely nominal and as far as can be learned, no business is being done in these markets.

Current Quotations British Coals f.o.b. Port, Gross Tons

Cardiff	Oct. 8	Oct. 15†
Admiralty Large	31s. 3d.	*30s.@31s.*
Steam, Smalls	19s. 6d.	19s.@20s.
Newcastle:		
Best Steams	27s. 6d.	*27s.@27s. 6d*
Best Gas	27s. 6d.	*27s.@27s.6d.*
Best Bunkers	27s.	*26s.@27s.*

†Advance over previous week shown in **heavy type**, declines in *italics*.

New York's August Exports Drop

There were 13,769 tons of anthracite shipped to Canada through the Port of New York in August, 1921, as compared with 14,259 tons in the preceding month. In August, 1920, Canada was shipped 6,003 tons and in July, 9,716 tons. Altogether there were 15,430 tons of anthracite shipped to foreign countries in August; 1,021 tons of bituminous and 98 tons of coke.

Hampton Roads Accumulation Reduced; Export Market Inactive

Very little change in the market is apparent, with export business reduced to a minimum and every effort being made to increase the coastwise trade. Movement to New England is steady and shows a slight increase, while the bunker business is not as brisk as in previous months.

Accumulation has been somewhat reduced, relieving coal from demurrage, but no appreciable change has been made in prices on this account. Freight rates for export show little change, although rates to New England are slightly increased.

September registered the lowest dumpings since December, 1919, with barely 900,000 tons sent over the piers. Dumpings of high-volatile coal is at a minimum, vessels preferring low-volatiles for bunkers in view of the slight difference in price. The piers are

maintaining a fairly regular dumping schedule, however, and a number of vessels are reported bound for this port for bunkers within the next week. The bunker busines is expected to do much during the winter to sustain the market, a slight increase in general shipping through the port being noted.

PIER SITUATION

	Week Ended Oct. 6	Week Ended Oct. 13
N. & W. Piers, Lamberts Point:		
Cars on hand	1,316	1,655
Tons on hand	76,803	87,751
Tons dumped for week	53,653	99,569
Tonnage waiting	7,000	12,500
Virginian Ry. Piers, Sewalls Point:		
Cars on hand	1,675	1,336
Tons on hand	83,750	66,800
Tons dumped for week	32,659	74,856
Tonnage waiting	6,700	14,000
C. & O. Piers, Newport News:		
Cars on hand	1,432	782
Tons on hand	67,000	39,000
Tons dumped for week	60,038	35,273
Tonnage waiting	2,255	4,715

Belgian Production Is Declining

In a review of the foreign coal markets, the *Guaranty Trust Co of New York* states that Belgium's coal exports were inflated as a result of the British strike and averaged four and one-half times greater this year than during the corresponding period of 1920 and about 25 per cent greater than in 1913. Imports of coal also have increased considerably over 1920, but are still less by about 60 per cent than those of 1913.

The situation in the Belgian mines has recently become less favorable, due principally to the resumption of work in the British pits and the industrial depression in Belgium, which is still serious. Nevertheless, France and Switzerland continue to send in large orders. The prices charged are on an average about 20 fr. more than those for domestic consumption. The quality of industrial coal is still inferior. The mines are not always able to dispose of the stocks of industrial coal and, in the middle of August, it was estimated that the stocks of this category amounted to about 70,000 tons. The application of the 8-hr. law on Oct. 1 is expected to reduce somewhat the present production.

The coke market is slack and more ovens are closing every week. More than 50 per cent of the furnaces in the country are closed at present.

Poland's Coal Output Is Now Almost at Pre-War Level

Coal production in Poland is now approximating the pre-war rate of output. A summary of economic conditions in Poland was made available at the Department of Commerce, Washington, Sept. 12. An extract from the statement is as follows:

"The present Polish territories before the war produced about one-half of the coal which they consumed. Considerable injury was done to the mines during the war and their production fell to about 70 per cent of the pre-war average. The Polish Government has done much to stimulate production and during the months of April and June, 1921, the output became approximately 90 per cent of the monthly average of 1913 and exceeded that of years preceding 1913 (the output for May was somewhat lower on account of a strike."

Sequel of Flooded Pits in Scotland

The result of allowing the pits to flood during the mine dispute is shown by the appeal to the Scottish Board of Health on behalf of the Fife Mineworkers' Union regarding the destitution existing among Fifeshire miners. The situation is very serious and dangerous. The Miners' Association has exhausted its financial resources and has incurred considerable debt. Unfortunately, owing to flooding and collapse of large portions of the workings, many miners have been unable to find employment.

Reports From the Coal Fields

New England

BOSTON

Light Current Demand—Large Buyers Mark Time—All-Rail Coals Continue Dull—Anthracite Demand Less Brisk.

Bituminous—Even at minimum prices on Pocahontas and New River the market drags along without any sign of improvement. The agencies are continuing their forcing methods and consumers are being supplied right up to the limit of storage. The few who were awaiting Oct. 1 before laying in a prudent reserve are now furnishing what buying power there is. The whole territory is being scoured for business, and the response is much less than some of the shippers anticipated.

Of the present volume of steam coal going forward the lion's share is from the West Virginia smokeless districts, via Hampton Roads. Not only is more than half the tonnage being supplied from that source but it is clear that if freight differentials continue to work against all-rail routes the proportion of southern coals will continue to increase to the two-thirds that prevailed before 1914.

There is small inducement today for purchases beyond 60 to 90 days consumption. Industries show practically no increase in fuel consumption, and instead of looking forward to better business during the winter there seems a tendency to curtail expenses and postpone extensions. In several commodities besides coal there is observed a somewhat more slack demand, although there are opinions that these dull spots are only temporary.

The reduction in bituminous rates in railway-owned barges from Philadelphia has not proved sufficient to increase the volume dumped at that port. The difficulty is more deeply seated than can be reached by a mere 50c. reduction in an extremely high rate, as compared with privately-owned transportation.

What amounts to a minimum movement of Pennsylvania steam grades is passing the Hudson River transfer points this season. From the districts around Pittsburgh there is reported a slight curve upward in production, but possibly here and there this is due to local conditions that oblige the operators to provide a certain amount of work. Certain it is that the proportion of all-rail bituminous used this year in New England has dropped off most seriously.

Anthracite — Undeniably, there has been a slightly receding demand for domestic sizes. Pressure brought to bear upon retailers to take sizes other than stove and chestnut has somewhat relaxed, although a week of really cool weather will reverse the situation with very little ceremony.

To those ports where navigation may be expected to close around Dec. 1, there is a fair volume of coal moving, although if it cannot soon be made to move faster there will be a certain amount of apprehension, especially on the Penobscot.

Tidewater—East

NEW YORK

R.R. Controversy Delays Stocking Purchases of Anthracite — Bituminous Market More Active — Competition Keen—Roads Warn of Car Shortage

Anthracite—The recent cool days have not served to spur the slow moving sizes to any great extent. The only result at wholesale has been to cause a further tightening of the sizes least in need of acceleration.

Stove has been in good demand right along and chestnut has had call from around Sept. 1. As a result of the early buying of egg, the first cold snaps have passed almost unnoticed so far as that size is concerned and the same can be said of pea. The smaller classes of domestic consumers are buying more than those located in the better residential districts. The public still has that feeling that freight rates will be reduced and that prices will be lower, therefore they are delaying a little longer.

Late buyers are taking tonnage in even smaller lots than usual. This is interpreted both as an indication of lack of ready money and the hope of lower prices.

RETAIL PRICES FOR OCTOBER

	Manhattan	Brooklyn
Broken	$13.05	$13.60
Egg	13.05	13.00
Stove	13 30	13 25
Chestnut	13.30	13 25
Pea	11.05	11 00
Buckwheat	7 90	7 90
Rice	6 90	6 90
Barley	5.90	5 90
Bituminous	8.50	8 50

Bituminous—While the market is far from being active it is by no means as dull as it was during the summer and inquiries are now more numerous. Consumers have held off until necessity compels them to buy.

In spite of the increase in volume of sales the market will not be in a healthy state until it is possible to get a better profit on tonnage that is being sold. Operators located in the union fields are at such a disadvantage in competitive markets that many of them have virtually given up trying to do business except in territory from which non-union coal is excluded. Even in those sections, coal of good quality is offering so cheap that no one will buy the low grades.

Perhaps the best indication that tonnage movement is gaining faster than many realize is found in the recent notice sent to shippers by a Pennsylvania R.R. official, beginning, "We are now confronted with a shortage of coal cars," and going on to say that there is a possibility of placing the distribution on a percentage basis in the near future. Operators along the Baltimore & Ohio have also been told by officials that surplus cars on that system have dwindled until at present there is practically no serviceable equipment that is not in use.

Tonnage handled over the local piers is restricted by the fact that consumers in southern and eastern New England are turning to smokeless coal because of the low prices at which it is offered. Southern coal was quoted here at $6.40 alongside.

PHILADELPHIA

Irregular Shipments Hurt Retail Demand in Suburbs — Moderate Steam Market—Slight Bituminous Improvement—Prices Strengthen.

Anthracite — Seasonable weather has helped the retail trade. Retailers are all doing a fair amount of business and getting a good percentage of cash, as much of the ordering is now for ton lots, for which cash is demanded.

Conditions outside the city are not so good, particularly where the retail men are in competition with teamsters making track deliveries. In some cases retailers are beginning to fight back by meeting the prices of the newcomers, but in the main this has done nothing more than further demoralize the situation. There is still a feeling among consumers that prices must come down and they point to these cuts as evidence.

Relative demand for the sizes continues unchanged, but there are some signs that dealers are getting a better proportion of stove. If anything, nut has improved its position. Retail prices show some signs of getting stronger, as each week there is an increasing number of dealers who are quoting $14.50 per gross ton for stove and nut, although it is believed the majority are yet 25c. lower than that.

Steam coals are not moving very freely, although there is a slightly better demand for buckwheat. Rice continues the heavy size and the companies are still dumping in their storage bins. Barley is in moderate demand.

Bituminous—The weather has probably had some effect on sales, as one more frequently hears of slightly improved shipments. Freight rates continue to be much of a factor in the consumer buying, as the belief grows stronger that something will happen to reduce rates by the first of the year. Buyers exercise the utmost conservatism as to stocks.

The only exception, and that to a moderate degree, is the railroads, as they are still adding to their reserves. The one drawback in dealing with the railroads is the somewhat long wait for money. Although there is still some talk of a railroad strike, it fails to move the buyer.

Spot prices, which have been holding firm for more than a month, show a tendency to move slightly forward, at least on the best coals. There is, of course, plenty of low grade coal to be had almost at the buyer's own price.

BUFFALO

Bituminous Market Unchanged — Reports of Good Business in Sight—Anthracite Moving Fairly Well.

Bituminous—Only a few shippers report any increase of tonnage and it is quite likely that any spurts may be temporary. Still the tone of the market is good, in view of the slow sales. Belief is general that the demand will increase slowly during the winter, so that by spring the volume will be decidedly greater than it is now.

The fall has been warm, so that the demand for office-building fuel is just now coming in. If the winter is cold the demand will soon show from that. Shippers send their men out more or less, but it is mainly to keep them in touch with the consumers as far as possible.

Mining districts that used to be out of this market on account of high freight rates, are trying to get in, and if their coal were not so different from that now in use here it would sell readily on account of lower prices.

Quotations continue somewhat unsteady at $3 for Youghiogheny gas lump, $2.75 for Pittsburgh and No. 8 steam lump, $2.50 for Allegheny Valley and all mine run, $1.60@$2 for slack, adding $2.36 to Allegheny Valley and $2.51 to other coals for freight.

Anthracite—Some jobbers handling independent coal report that they are doing quite a good trade. All prices are now much the same, though the independents always try to get a little more than schedule.

It is probable that more hard coal has been distributed in Buffalo than formerly, as the old retailers generally claim to have done their usual business and there are new ones that are quite active. A few of the smaller retailers are cutting prices.

Lake — Shipments are somewhat larger than they were, but are not quite equal to midsummer. For the week ended Oct. 12 the loadings were 103,240 net tons, of which 48,100 cleared for Duluth and Superior, 24,600 for Chicago, 20,900 for Milwaukee, 7,600 for Green Bay, 1,700 for Cheboygan, Mich., and 340 for Pelee Island, in Lake Erie. Freight rates continue easy at 65c.@70c. to Chicago, 60c. to Milwaukee, 55c. to Green Bay and 50c. to Duluth, the other cargoes being at consignee's rate.

Coke—The small amount of iron ore brought in during the season shows that the furnaces do not intend to stock up coke for the winter. Most of them have byproduct plants and when business is steady enough to warrant operation they will use them. Prices rule as formerly.

BALTIMORE

Demand Improves Slowly—R R. Strike Threat a New Factor—Prices Soft—Hard Coal Men Have Difficult Demand.

Bituminous—In former years when a railroad strike threatened, business men immediately ordered coal for reserve. With such a complication now impending it is expected that requests for October deliveries will be greatly increased. The general business here shows a better tone that is not reflected as yet in coal prices, which continue abnormally low. Some of the dealers report that demand has increased slightly but all admit that the supply at sharp competition prices is more abundant than is the call.

Exports remain unsatisfactory. For the first half of October, as was the case in September, only three vessels cleared with export coal cargoes. Bunker trading is very depressed, and price offerings at times have been below even the ridiculously low figures in line trading.

Anthracite—Dealers are facing quite a few complications, among other things that of being forced to pay cash for their supply and getting a constantly increasing flood of requests for credit from customers who in former years were in the habit of paying cash. The dealer also has been forced to take a ton of either pea or nut from some of his mine connections before he can get delivery of a ton of stove coal, and for about two weeks past has had egg added to the list. This has caused a great deal of the sizes which the public will not take to pile up in railroad yards, arousing a protest that such an accumulation was resulting in serious railroad congestion.

In the meantime the public is demanding the stove coal but is with-

holding on purchasing practically all other kinds. The slow purchasing here by the general public, the ordering even in the face of winter being on the one and two-ton basis, has left the city about 120,000 tons short of normal reserve in cellars and yards for this season.

Northwest

MILWAUKEE

Frosty Weather Arouses Market — Small-Lot Retail Distribution — Sharp Competition in Screenings.

Frosty nights and raw days have served as a stimulant to the coal market and deliveries are more satisfactory than they have been at any time during the summer and autumn. Dealers are actively soliciting business, but competition is confined to the element of quality, and prices are not affected.

There was never so much storage coke as at present, but there is no indication that there will be a price reduction. Deliveries of both coal and coke are in smaller quantities than has been customary in the past.

The steam coal market is somewhat better. Fires on soft coal docks are forcing the removal of stocks and screenings are being thrown on the market as low as $3.50@$3.75. This operates to the disadvantage of Western screenings, and makes them almost unsalable, until the forced condition changes.

Receipts during October up to the present writing aggregate 37,920 tons of anthracite, and 90,632 tons of soft coal, making the total receipts for the season to date 785,642 tons of the former, and 2,130,704 tons of the latter, against 631,533 tons of anthracite, and 1,702,205 tons of bituminous during the same period last year, a gain of 582,608 tons.

MINNEAPOLIS

All Buying Confined to Small Lots— Buyers Criticize Hard Coal Prices— Cold Weather Needed to Boost Movement.

From attacks on the coal trade by people in general, it would seem that the public thought the coal business was in the fix of the awkward soldier whose fond parent discerned the entire company "out of step but Jim." The attacks are somewhat keener on the anthracite business because prices have shown no reduction from a year ago. The loose talk of profiteering without much to base it upon has practically put every dealer in any ware under suspicion. While the reconstruction period is on, this sort of thing is possible to be expected, but it is hard to endure.

Killing frosts have struck, some snow has fallen, and yet people are holding back from buying coal as though there were ample time. They are following the system of not stocking beyond a limited period. One and two-ton orders predominate where in former years it was two to five or more.

The same rule applies to steam buyers. One cause is the high cost which makes it desirable to buy less and distribute the amount to be paid over a wider period. Another and strong factor is the continued hope that there will somehow develop a reduction in price. On steam coal, all the probabilities point the other way. But the buyers remember hopefully the situation of a year ago, when after a scarcity through the summer and fall, the beginning of winter saw a slump in quotations. If hope deferred maketh the heart sick, the steam buyers are generally possessed of very strong hearts, for despite the disappointments to date, they are still firm in their expectation of reduced costs.

Contract prices seem to have confined the market for the present to a close range to the cost laid down. Many in the trade are looking for a reaction after the weather prompts a little more buying pressure, but there will be a weight on the market from all appearances, due to the buyers' strike, which seems to hold tight to limited action at all times. Should there be much severe weather early in the winter it would doubtless serve to force the buying of a sufficient tonnage to brace the market.

DULUTH

Seasonal Demand Growing — Prices Hardening—Screenings in Short Supply.

Flurries of snow on two days have given impetus to shipments, and dealers report that customers are hastening to put a winter's supply of anthracite in bins. More coal by far moved from docks this week than any week since the opening of navigation.

Prices are hardening all along the line, with bituminous firm at $7 for Youghiogheny and Hocking, $10 for Pocahontas lump and egg and $7 for mine run. Screenings are steady in the main, but some damaged lots are being released at $3. A peculiar situation has arisen in the screenings market. A shortage is threatened and it is said that one dock is 15,000 tons oversold and is in the market to cover its sales at any price.

Incoming shipments picked up, with twenty-eight cargoes received, of which eight were hard coal. The number of cargoes arriving is considered good for this time of the year, and the docks are working to provide space for the incoming coal. It is estimated that 5,600,000 tons of coal are on the docks now. Dispatch in unloading boats is extremely good.

Shipments from Duluth - Superior docks showed a falling off during September, the total being 18,739 cars as compared to 20,009 cars during August, and 21,126 cars during September last year. From Duluth docks, 6,391 cars were loaded and from Superior 12,344 cars.

Inland West

COLUMBUS

Increased Domestic Demand—Steam Sizes Are Slow—Lake Trade Active— Better Industrial Outlook.

With lower temperatures prevailing there is a stronger domestic demand. Retailers in the cities are the best customers, although some orders from rural dealers are being booked. There is still a decided preference being shown for the fancy grades such as smokeless and West Virginia splints. Retail prices are steady at former levels.

Steam business is still quiet, with the exception of public utilities demand. Distress screenings can be purchased at a low figure. Iron and steel mills are buying more actively, however, and this appears to be an outlet for the resultant sizes.

The Lake trade is still rather active. The H. V. docks at Toledo during the week ended Oct. 8 loaded 140,638 tons as compared with 150,847 tons the previous week, making a total of 3,656,962 tons for the season. The T. & O. C. docks loaded 42,752 tons during the same week, making a total of 948,196 tons for the season.

DETROIT

Slight Buying Improvement Noted— Retail Stocks Moving—Prices Firm— Distress Tonnage Reduced.

Bituminous — Increasing market interest is reflected in a heavier volume of buying. However, less business is being transacted than there should be at this season.

Retailers, although not overcrowded with business, are being kept fairly busy with the distribution of stock that should have been in consumers' bins several months ago. The present movement has not yet worked the retailers' stocks down to a point where they find it necessary to make further additions to their supply.

Consumers of steam coal are making purchases irregularly and in small quantities. Notwithstanding the small-lot buying, a number of the large users are reported to have some accumulation of reserve. With factories now showing curtailed production and reduced consumption of fuel, some buyers have been able to satisfy their requirements by picking up bargain offerings.

Smokeless lump and egg is quoted $4.75, mine run $2.65, nut and slack $1.60. Ohio domestic lump is $3.15@ $3.25, egg $2.40, mine run $2, nut and slack $1.15. West Virginia 4-in. lump is $3.25, 2-in. lump $3, egg $2.50, mine run $1.90, nut and slack $1.25. Pittsburgh No. 8 steam lump is $2.40, mine run $2.15, nut and slack $1.65.

Anthracite — Retail yards are still well supplied. Despite slow demand, some independents are reported getting premiums, sometimes as high as $1 a ton.

CINCINNATI

Prepared Coals in Good Demand—Market Steadies Although Slack Is Weaker —Retail Prices Firm.

An increase of orders for prepared coal has played havoc with the market on steam sizes and screenings. There is a shortage of cars for the movement to the southeast. River business has picked up a little, even in the face of the huge storage piles between Huntington and Louisville.

Smokeless prices have recovered a little from their unsteadiness. Spot lump and egg, in distress can still be bought around $4, with $4.50 as top for company sales. Nut is $3@$3.50 with some concessions on the low for quick sales. Mine run is quoted $2.25@$2.75 and slack is down to $1.10@$1.50.

Bituminous slack was hardest hit of all, some southeastern Kentucky offerings going as low as 75c.@85c. West Virginia sales range 95c.@$1.50. Sales of mine run are made from both states at $1.65@$1.85. Kentucky lump recovered a little from its slump, with $3@$3.50 as the range. West Virginia lump and block is $2.75@$3.25.

There has been no change in retail quotations, although one company is offering slack as low as $4, as against $5@$5.25 by the other concerns.

ST. LOUIS

Domestic Business Picking Up—Prices Advancing — Public Buying Cheaper Coal—Steam Situation Unimproved.

Chilly weather has improved the domestic situation. Dealers find most of the demand is for Standard and Mt. Olive coals. Movement of Carterville is just fair. On Oct. 12 prices advanced 25c. on all sizes, making Carterville $7.75, Mt. Olive $6.75, and Standard $5.75. A further increase can be expected at almost any time if mine prices advance.

Domestic business promises to be good, but buying is mostly in small quantities. Steam is slow. A little storage coal is moving in, but nothing in any volume. Country business is good on domestic but slow on steam.

There is a good movement of coal to Western and Northwestern points through this gateway. Favorable deliveries are reported on coke, both gas and byproduct.

CLEVELAND

Domestic and Industrial Demand Slightly Better — Lake Movement Speeding up—Small-Lot Buying Still Continues.

Cooler weather and sustained improvement in the industrial situation have combined to give a better tone to the domestic and industrial coal markets. Demand for domestic fuel is brisker than for steam coal, but even householders are showing an unusual reluctance to laying in their entire winter's supply at this time. The feeling prevails that since there is no apparent danger of a shortage it might not be disadvantageous to await freight rate developments.

It is estimated that 68 per cent of the unemployment in Cleveland has been caused by slackened operations in some phase of iron and steel manufacture. A survey just made of the iron and steel and machine shops of this city discloses a distinct improvement in many of them, though all are still running far below normal. These heavier operations are being reflected in more coal requirements, but hand-to-mouth buying still prevails.

The better demand and the stimulation of the Lake movement has resulted in a heavier output from mines in Ohio. The coal movement is speeding up largely because of the fact that the rail rate reduction of Lake coal from mines to lower docks expires on Oct. 31, and most operators are striving to complete their shipments before that time. It is understood that the Wheeling & Lake Erie and the Bessemer & Lake Erie will not advance their rates after Nov. 1, but other roads are expected to do so, unless there is some change in plans in the meantime.

Bituminous receipts at Cleveland for the week ended Oct. 8 were 994 cars, divided: Industrial 699, retail 295. This is an increase in volume consigned to retailers of some 43 cars over the preceding week.

CHICAGO

Steam Market Quiet While Domestic Picks up—Eastern Coals in Good Call —Strike Threat May Move Screenings.

As is true throughout the whole Northwest, the domestic market has picked up very considerably in Chicago. Smokeless, which was offered at a bargain a few days ago, has been snapped up and now the price of mine run is holding firm at $2.50@$2.75. Smokeless coal has proved to be a great surprise to Illinois and Indiana operators. During the war but little of this was allowed to come into Chicago on account of the zoning system. During that time the better grades of Illinois and Indiana had an opportunity to become very well established. It was thought that the demand for Eastern coals would never again reach the point attained in prewar days. However, more Eastern coal has been handled in Chicago this year than perhaps ever before. The reason for this popularity is not entirely on account of quality. Eastern coal has been coming into the Chicago market at prices very nearly equal to those quoted by our own operators with local mines.

The steam market remains quiet. Every now and then some large manufacturing concern comes in and buys fifty or a hundred cars, but at a rock bottom price. Operators with storage piles of screenings are beginning to worry as to how they will ever be able to dispose of this surplus. So long as industrial conditions remain as unsatisfactory as they have been, any betterment in the steam market is considered a very remote possibility. The strike threat of the railroad men will, of course, provide an increased demand.

Domestic coals are moving in a satisfactory way. This is true both of coals from mines in Indiana and Illinois as well as those in the East. The cooler weather has resulted in a little flurry on Pocahontas as well as anthracite, but it is believed that this is entirely a weather propositior.

Southwest

KANSAS CITY

Labor Situation Clears — Men Returning—Seasonal Domestic Demand.

The situation, which has been considered very critical since the walkout of the men, improved considerably on Oct. 17, when 1,500 miners returned to work in District 14. They had been idle since the jailing of Howat and Dorchy as a protest against this action. The operators feel that with the existing dissatisfaction between the miners and their chiefs little trouble will be experienced in maintaining operations in the immediate future.

The cool weather has stiffened the demand and already jobbers are limiting shipments so as to take care of the trade to best advantage. Slack is still very slow but the use of modified lump and mine run by industrials has enabled operators to keep fairly well cleared of screenings.

Arkansas semi-anthracite is holding steady, with lump selling $7.50@$8 and screenings $2. Lexington Missouri lump has increased and is quoted $4.75 @$5. Oklahoma lump is $7.25, nut $5.75, mine run $4.50 and screenings $1.75@$2.

South

BIRMINGHAM

Commercial Market Sluggish—Domestic Improved by Cooler Weather—Better Furnace Operations.

Inquiry here generally indicates a very unsatisfactory condition in the steam market, while the demand for domestic is little better. The retail trade has reaped some benefit from the more seasonable weather conditions, but the movement of domestic coal from the mines is still slow and difficulty is experienced in disposing of the tonnage available.

While industrial conditions generally seem to be greatly improved and it would seem that the demand would naturally be heavier, such is not the case and the market is extremely dull and listless.

Several of the railroads have slightly increased the tonnage which they have been taking on contracts. There has also been a temporary betterment in demand for bunker coal at the ports of Pensacola and New Orleans.

Production has been considerably increased by the improvement in furnace

operations, there being a 100 per cent increase in the number of stacks now operating as compared with Aug. 1. A good tonnage of coal is being consumed in coke ovens which have recently resumed production.

LOUISVILLE

Demand Better and Prices Firmer—Southern Market Improves — Retail Trade Confined to Small Lots.

Colder weather has resulted in a better demand in the South and consumers are beginning to stock a little fuel. The cottonseed and cotton ginning lines are taking some coal, and the textile plants are busier. Woodworking industries and the automobile trades are looking up a little, while the implement and wagon makers are taking the road with reduced prices, anticipating ability to start producing on a larger scale. In Louisville there is fair demand from the clay working and cement mills and other scattered industries, there being no especially large call from any one source.

Retailers report that with people out of work or employed only part time there is quite a volume of small order business which is not especially profitable. Collections are a little slow.

West

DENVER

Constitutionality of Industrial Act Upheld—Operating Conditions Improve.

An important ruling by the state Supreme Court, regarding the constitutionality of the Colorado industrial act, holds that the law is constitutional and that coal mining is impressed with the public interest.

The decision comes at a time when the miners' officials have gone on record as challenging the powers of the commission in connection with an investigation arising out of an attempt on the part of the Colorado Fuel and Iron Co. to reduce wages. This will come to a test when the commission announces its findings in the southern Colorado investigation.

Conditions generally are improving. For the week ended Sept. 24, Colorado's production was 215,000 tons of a possible full-time output of 292,429 tons, within 25,000 tons of the tonnage of the corresponding week in 1920. Lack of orders was equal to a lost production of 22 per cent.

News From the Coal Fields

Northern Appalachian

PITTSBURGH

Production Down to About 30 Per Cent—Costs too High—Some Shading in Panhandle.

With the almost complete cessation of Lake shipments the district is deprived of a large part of what little business it had. Production is down to about 30 per cent. Some coal is going to the railroads and there are some shipments of steam on contract. A large part of what production there is involves gas coal, which has little competition from adjoining fields.

The Connellsville region is getting not a little business that would ordinarily go to the Pittsburgh district, but the Connellsville region itself is having a hard time selling coal. The miners show no disposition to consider wage matters execept in connection with the new scale, and such discussion is now set for next February.

Conditions in the steel industry have not been improving particularly in the past week or two and in some quarters mill operations are expected to taper off in the next two or three months.

In the past week or two some of the Panhandle operators have been naming lower prices than formerly. Asking prices in general are unchanged, except that gas slack is off 15c.@25c. Steam slack is $1.65; mine run, $2.20@$2.25; ¾-in., $2.75; 1¼-in. domestic, $3.25. Gas slack is $1.85@$2; mine run, $2.25@$2.35; ¾-in., $2.55@$2.75.

ANTHRACITE

Steady Production—Rail Strike to Increase Demand—Second Mining Still Delayed.

Mines are working steadily with a few exceptions, resulting not from lack of market but from reasons more or less individual to the plant. The Glen Alden Coal Co. still has mines idle by reason of the Kohler Law. Though that legislation has been declared unconstitutional, the company will hardly venture to start second mining until the constitutionality of the act has been decided by higher authority than has as yet passed on it.

Strikes are less frequent this year, but the Kohler Law makes up for labor unrest as a preventive of production. The output for the week ended Oct. 8 was 1,793,000 net tons as compared with 1,832,000 in the preceding week.

EASTERN OHIO

Situation Improved—Steel and Tube Industry in Market—Lake Movement Speeds up—Domestic More Active.

Reports indicate a slight improvement in the general business situation, and the steel industry continues to show increased activity. Production for the week ended Oct. 8 rose to higher levels, not touched since the early part of August. Output amounted to 393,000 tons or approximately 63 per cent of the rated capacity. This represents an increase of some 30,000 tons over the preceding week. Against the potential capacity of 25,000,000 tons, this field has produced for the calendar year to Oct. 8, 13,545,000 tons or slightly better than 54 per cent of capacity.

Lake shippers are speeding up before the close of the season. Several shippers are planning to send a considerable part of their output to Upper Lake ports; thus they will have advantage of the 28 per cent refund which expires Nov. 1. As yet stock on the lower docks is running around 10,000 cars, and receipts 2,000 cars.

The larger steel and tube plants are said to have depleted their stock and are in the market for large quantities of coal. In fact, more buying of steam coal the last few days has brought additional cheer to the coal trade.

Railroad fuel requirements, if anything, are increasing, and are taking 35 to 40 per cent of the output. Resumed operation on the part of certain mines which cater to domestic trade has been brought about by the arrival of cold weather and the improved retail situation.

Figures given out by the operators' association indicate that their mines worked 52 per cent of possible worktime during the week, and produced a little better than 60 per cent of capacity. Time lost account "no market" is around 45 per cent.

CONNELLSVILLE

Demand Less Than Expected—Ovens Blown in too Freely—Furnace Coke Easier, Foundry Stiffer.

Recent stiffening in Connellsville coke has entirely played out. A week or two ago it was expected that a little buying would eliminate the lower priced furnace offerings, leaving the market at a definite advance. There has been some buying, but not as much as expected. Prices done were a shade lower than was counted on, fourth-quarter contracts being made at $3.40@$3.50, and there is coke still offered at these figures without finding takers. Several furnaces that were expected to go in very shortly have deferred action, either because they find prospects unsatisfactory for selling pig iron or because they wish to wait for freight rates to be reduced.

While the increase in coke consumption, by idle furnaces blowing in, is less than was expected, the increase in production is, if anything, more than is necessary, and there is surplus coke hanging over the market.

A sale of a dozen carloads of spot furnace at $3.35 represents substantially the top of the market for round lots, while odd carloads for outside consumption bring up to $3.50 when the buyer is at all particular. Foundry coke is stronger, it being harder than formerly to pick up any at $4.25, while

favorite brands bring $4.75 with less difficulty than formerly.

The *Courier* reports production in the week ended Oct. 8 at 14,300 tons by the furnace ovens, and 38,900 tons by the merchant ovens, making a total of 53,200 tons, an increase of 900 tons.

UPPER POTOMAC

Market Sluggish—Operations Curtailed —Prices at Minimum.

Conditions were unchanged during the week ended Oct. 8. Demand was so poor and prices so low that most companies remained in idleness. In the Georges Creek region about all that was produced was Big Vein coal. Prices were still at a minimum, owing to the lack of demand.

CENTRAL PENNSYLVANIA

Increased Production Absorbed by Non-Union Mines—Operators Prepare Data for Senate Committee.

An upward trend in production is noticeable from the fact that during the week ending Oct. 9 there were loaded 14,008 cars, an increase of 762 over the week previous. The daily average was 2,213 as compared with 1,835 cars during the month of September.

This increase has been largely absorbed by the non-union mines. In September, the union mines loaded 54 per cent of the amount which they loaded in December, 1920, whereas the non-union mines in September loaded 91 per cent.

Operators are now preparing data to present to the committee of the United States Senate which will have in charge the bills introduced by Senator Kenyon, of Iowa, regulating the coal industry.

UNIONTOWN

Possibility of Lower Freights Halts Coke Market—Prices Are Firm—Coal Production Increases.

There is reflected a halt this week in what promised to be a steady upward trend toward normal conditions in the coke region. There are several factors to be considered and the conclusion has been reached by some operators that the situation is far from discouraging.

The opening of the month saw a number of inquiries out for contract coke and while some were placed, resulting in resumption at several operations, quite a few of the inquiries developed into the "bubble" variety. The possibility of lower freight rates has at least influenced blast furnace interests in postponing relighting.

That disposition being reflected in the demand for coke, the region has not made any headway in regaining normal production. Prices remain firm for the reason that no surplus stocks are being created and plants are not resuming operations until orders for tonnage are placed.

Production in coal is making rapid gains but the increase is coming principally from the smaller mines. It is also noted that operators are mining very little coal for spot sales. Quotations remain the same.

FAIRMONT AND PANHANDLE

Domestic Improves at Expense of Steam Sizes — Steel Mills Increase Requirements—Spot Market Still Lags.

Fairmont

Price shading featured conditions during the week ended Oct. 8. There was little spot business in hand, however, and the poor slack demand offset a better domestic call. Toward the end of the week slack stiffened somewhat, bringing the price up to about $1.50. Lake and Tidewater shipments were almost negligible.

Northern Panhandle

About all that kept production going was the large volume mined for railroads. The output ranged around 60,000 tons. Steel mills were mining a little more coal from their own operations but there was no spot demand except for prepared sizes.

Middle Appalachian

LOW-VOLATILE FIELDS

Domestic Prices Being Cut — Western Markets Becoming Sluggish — More Steam Tonnage in Distress.

New River and the Gulf

New River coal was sold with difficulty during the first week of October, even prepared sizes being off in price, $4@$5. Tidewater shipments were small, of course, and the bulk of production went to Western markets, which were becoming overburdened.

Some Gulf operations were forced to curtail their output to the very minimum and production did not reach 40 per cent of capacity. Prepared coal ranged $4@$5 and was sold with increasing difficulty.

Pocahontas and Tug River

A better Western absorption of prepared sizes enabled Pocahontas producers to keep well above the 300,000-ton mark. This was accompanied by price shading down to $4 a ton. Mine run and slack remained on their former low levels. Lack of equipment figured to some extent in the production loss.

Contract shipments and movement to associated companies kept up Tug River production. There was little or no industrial demand, as a result of which mine run and slack were extremely soft.

HIGH-VOLATILE FIELDS

Seasonal Domestic Production Hampered by Steam Sizes — Output Still Low—Cars Not So Plentiful.

Kanawha

A fairly good domestic call developed during the week ended Oct. 8, yet there was little change in mining conditions because of the almost insignificant demand for industrial coal. Mine run averaged $1.75 and slack was in such poor demand that prices were not higher than $1.00@$1.25.

Logan and Thacker

There was also a slightly increased domestic demand in the Logan field but slack was still decidedly draggy. Mine run also came in for much dullness in view of the general industrial depression.

Thacker conditions were practically unchanged, aside from an increased call for prepared sizes. Production remained at about 40 per cent of normal with railroad shipments constituting the bulk of the output. Some difficulty was experienced in securing cars readily.

Northeastern Kentucky

Production was speeded up somewhat because of the seasonal domestic call. The output reached about 40 per cent of capacity, larger than at any time in recent months. There was little demand for steam coal and slack was almost impossible to move.

Virginia

Because of their contract orders only the larger mines found it possible to operate. Fully 80 per cent of the mines were still out of commission, although there was a slight increase in domestic demand, with higher prices, which were offset by the poor market for steam sizes.

Middle West

MIDWEST REVIEW

Domestic Market Advances—Steam Demand Improves as Rail Strike Looms—Discussion in Miners' Union.

The improvement during the last week in the coal market has been very marked. Prices have strengthened materially, in some cases advancing as much as 25c.@50c. The improvement, however, has all been on domestic sizes.

With the colder weather sales agents immediately felt the change in the whole situation. Although the weather has become a little warmer, the demand has increased rather than decreased, and at this writing, is still going strong. Some companies producing the better grades are sold up for the time being on their lump and egg. Depressing stories, however, still continue to come in from the Northwest as we hear of whole communities deciding to burn up their corn for fuel rather than purchase coal. In one instance it was found that coal costs about $11.50 per ton at the station whereas corn could be bought at $5.40, and the farmers claim that corn is a good fuel.

Steam coal has improved to some slight extent. A little flurry has been caused by the announcement of the railroad strike. This has tended to help out the price on screenings anywhere from 10c.@15c., but outside of this betterment, the market remains dull and uneventful as there is no industrial revival in sight in the immediate future.

The frame of mind of the United Mine Workers is causing some thought. There has been a tendency during the past few week to dispute President Lewis' authority. Howat, out in a Kansas jail, has openly defied the central authorities of the United Mine Workers, and, what is more significant, is receiving the backing of his men. In Illinois, Farrington, local head of the mine workers, has issued a statement to the press backing up Howat and reviling Lewis. It would not surprise a number of old timers if a very serious split occurred in the ranks of the United Mine Workers this spring.

SOUTHERN ILLINOIS

Domestic Situation Getting out of Hand —Steam Still Heavy — Car Shortage Looms — R. R. Tonnage More Satisfactory.

Carterville lump and egg advanced last week to $4.30 with nearly every operator. Nut went up from $3 and under to about $3.25@$3.50. Screenings are still heavy at 85c.@$1, and several mines are piling up this size. Most mines are considerably oversold on lump and some on egg. Domestic business has taken a sudden spurt with the recent cool wave.

Several mines have been affected by an insufficient supply of cars. Railroad tonnage is fairly good. Working time averages three to four days on account of inability to move steam sizes. In Duquoin and Jackson County somewhat similar conditions exist and practically the same prices prevail.

Mt. Olive shows better tonnage. Good movement is reported to Kansas City and Omaha, as well as to Chicago and the North. Screenings sell at 85c. @$1. Railroad tonnage is good. The St. Louis domestic price has advanced to $3.50; country figures are still $3.75.

The Standard field shows some improvement in screenings. Railroad tonnage is better. The bulk of movement is on 2-in. lump to St. Louis, while the country is drawing remarkably well west of the river. Car shortage is showing up at some mines.

WESTERN KENTUCKY

Demand Somewhat Better — Prices Firmer—R.R. Repairs Idle Cars.

Industrials are unable to take the large amount of screenings, as prepared coal is in demand as a result of cold weather and is moving much better. Prices are somewhat stiffer all along the line.

Car supply is good and, according to railroad officials, it will take a considerable increase in tonnage to cause any material shortage, in spite of the argument of some operators that a 15 per cent increase in shipments would result in a shortage.

The Louisville & Nashville has put back to work all car repair men, and is running the shops full, although the machinists are not all back.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Domestic Market Active — Slack Touches Lower Level.

A good deal more activity is apparent in the domestic market due to the cold snap and block is moving readily. Slack is the lowest for the year, sales being reported at Harlan at 90c.

Prices for Straight Creek block are $3.75@$4; Harlan $3.50@$3.75; Harlan or Straight Creek mine run, $2@$2.25; Harlan slack $1@$1.30, and Straight Creek $1.30@$1.50.

West

UTAH

Production Increase Seen—Prices Firm —Coalmen Attacked.

Production continues around 65 per cent of capacity but is xpected to increase as the weathr gts colder as there has not been much storage coal purchased so far. Prices remain firm.

The Citizen, a wekly magazine published in Salt Lake City, has made a bitter attack on "Utah's Coal Barons." The paper declared the coal operators have "laid seige to all the great coal deposits of the state" and are clinging to the old wartime maxim of "all the traffic will bear" with a view to summer.

WASHINGTON

Non-Union Labor Satisfactory — Production Increases—Healthy Demand.

The first full month of operaton with non-union labor in the commercial coal mines witnessed the production of 15,071 tons in September.

Men are daily being sent to the mines, while additional operations are preparing to reopen. Producers have practically complted the contsruction of new bunk houses and hotels at several of the mines, a necessary item in view of the fact that many of the houses in the camps ar still occupied by strikers.

News Items From Field and Trade

COLORADO

Operators in this district are pleased with the appointment of **Harry F. Nash,** vice president of the Oakdale Coal Co., as a member of the Colorado state transportation committee, by Governor Shoup. He succeeds **T. S. Nance.**

The Yankee Fuel Co.'s coal mining property near Trinidad, which was ordered sold recently by Judge Lewis of the Denver Federal District Court, to satisfy approximately $2,000,000 worth of bonds, was disposed of for $150,000 according to a preliminary report of DeStell De Lappe, special master. No information was given as to the identity of the purchasers of the property.

ILLINOIS

The Harco Mine at Harrisburg, in which eleven miners lost their lives Aug. 13, due to an explosion, has resumed operations after being idle on account of a strike. Wm. **Larson,** superintendent of the mine, resigned his position over the trouble.

B. W. Kilcuien well known in northern Illinois and Chicago, has joined the forces of Lorin W. Jones. He was formerly with the Rutledge & Taylor Coal Co., Chicago.

On account of the depressed market, especially on screenings and the smaller sizes, the **Sangamon County Mining Co.,** of Springfield, is making preparations to store a large quantity of screenings. A large pond located near the mine east of Springfield has been drained and the coal will be dumped into the basin. Other mines are following this example of storing coal, as the **Majestic Coal & Coke Co.,** operating at Clinton, is also making ready for the storing of a large amount of coal.

The Kuhn Colliery Co., of Du Bois recently resumed operation after being idle since last April. The mine being the only one in the town, many of the miners were threatening to leave unless work was resumed.

The Binkley Coal Co., 11 South La Salle St., has been organized under the state laws with capital of $100,000, to operate coal properties in Illinois. The company is headed by L. C. Binkley, W. H. Leland and Hubert E. Howard.

Among the mines in the southern part of the state which have been shut down during the past two months and are now reopening are: **Valier Coal Co.,** mine at Valier, having reinforced the roof of their main entry; No. 11 mine of the **O'Gara Coal Co.,** located at Eldorado; the mine of the **Franklin County Mining Co.** at Benton, having been idle during which time many needed repairs were made.

The large, new colliery in Saline County has finally been put into operation by the **Big Creek Coal Co.** A miner's train is operated daily to the mine by the Chicago, Burlington & Quincy.

What is considered the world's record for hoisting coal in one months' time was made in August by Mine No. 1 of the **Bell & Zoller Coal Co., at Zeigler.** During the month the mine worked 27 days and hoisted 133,666 tons and averaged 4,950 tons daily. The record before that was 132,000 tons and was held by the **Chicago, Wilmington and Franklin Coal Co.,** at Orient.

INDIANA

Deeds to more than 1,700 acres of coal near Somerville, were filed in Gibson County recently. Clement J. Richards, of Terre Haute, is the grantor and the **General Fuel Corporation** the grantee. It is understood that bonds for more than $500,000 will be issued by the corporation. Mr. Richards was instrumental in acquiring the deeds and also leases, of which a large number have been recorded. A small lake is being built at Somerville to provide water for the proposed mine.

A suit on account against the **Retlaw Mines Co.** asking for judgment in the sum of $112,885.19 was filed in the Superior Court at Terre Haute recently, by Walter S. Bogle. The judgment is asked in payment for various sums of money loaned to the defendant by Mr. Bogle since Feb. 27, 1911.

The Mutual Ice & Coal Co, recently organized with a capital of $160,000, has purchased the plants of the Sanitary Ice Co. and the Citizens' Ice & Coal Co., of Columbus.

Four hundred miners are idle as result of the burning recently of the tipple at **Bogie Mine No. 1**, at Blanford. It will be several weeks before the structure can be replaced and the mine started again. Plans are being made by the owners for the erection of a modern steel tipple to replace the burned equipment.

KENTUCKY

The Hance Coal Co., Pineville, capital $200,000, has been chartered by T. J. Asher, G. M. Asher and Robert Asher.

Charles W. Connor, one of the prominent mining men of the northeast Kentucky field, and a director in the Northeast Kentucky Coal Association, was in Elkhorn City and other points on Big Sandy recently working up sentiment for a miners hospital in that section.

John F. Buckingham of Ashland, president of the Chamber of Commerce of that city and extensively interested in coal properties on Beaver Creek was at Paintsville, Pikesville and other points on Big Sandy recently.

The Banner Fork Coal Co., of Kentenia, is considering the construction of a new electric power plant at its properties, with a number of extensions and improvements in existing mining plants. A housing development to provide for about 100 miners will be constructed. The work is estimated to cost in excess of $150,000.

C. N. Morrison, of Huntington, W. Va., who recently organized the Huntington Coal Mining Co., has secured about 1,000 acres of coal land near Prestonburg, and expects to begin development work in the near future.

The Roberts and Schaefer Co. has been given the contract of the **St. Bernard Mining Co.** of Earlington, for the construction of a new steel tipple.

MARYLAND

John C. Brydon of Somerset, Pa., and Baltimore, Thomas B. Davis and Joseph E. Davis ,nephews of the late Henry G. Davis, have organized the **Maryland Big Vein Coal Co.** They have bought and leased all the property of the **Potomac Coal Co.** at Barton, about 1,000 acres in all.

NEW YORK

Abel Mishler is now connected with Willard, Sutherland & Co., Inc., New York City, in the capacity of manager of the domestic department.

M. R. Gano, of Gano, Moore Co., sailed on the Aquitania recently for Europe.

W. P. Schoff, who for some time has been attached to the Johnstown, Pa., office of W. A. Marshall & Co., has been transferred to the New York office at 25 Beaver St.

OHIO

John Steinkorb, manager of sales of the Reliance Coal Co. of Cincinnati has been away on an Eastern trip. He visited the Buffalo and New York markets.

En route to Western cities, **J. B. Clifton**, of Beckley W. Va., head of the Raleigh Smokeless Fuel Co., spent a few days in the Cincinnati market recently.

George H. Cushing, of the American Wholesale Coal Association was the guest of honor at a luncheon in Cincinnati recently, given jointly by the Cincinnati Coal Exchange and the Cincinnati Coal Wholesalers' Association. R. A. Colter presided and Fred Legg, director of the wholesalers' association, presented Mr. Cushing. He said that purchasing agents had found the spot market on coal more attractive than the contract market, had felt that there was a good chance of freight reductions and saw the possibility of still lower selling rates through labor reductions. Most of the corportations represented were disposed to prefer non-union mines in buying and more than 75 per cent of them gave orders to non-union companies not only because of lower prices, but because they favored the open shop. The wisdom of carrying large reserves and of getting them early was unquestionable. Mr. Cushing told of the fight against unfriendly legislation at Washington and declared the emergency presented by the treat of the new Kenyon bill a very serious one which must have the closest attention.

The mine of the **Ohio Consolidated Coal Co.**, which was placed in the hands of H. M. Palmer and Roy Brenholtz as receivers, located on the C. & M. V. division of the Pennsylvania, is being operated by the receivers. No steps have yet been taken to lift the receivership which was brought about because of lack of capital.

The Elk Coal Co., of Columbus, has established branches for sales purposes at Lima, in charge of L. S. Stansberry; Marion, in charge of A. J. Sautter, and at Bucyrus, in charge of G. A. Bull.

PENNSYLVANIA

The Payne Coal Co., Inc., of Wilkes-Barre, has been organized to mine, buy, sell and deal in coal. Capital, $50,000; treasurer, C. Ernest Banker, Wilkes-Barre, Incorporators: Bruce Payne, Edgar M. Houpt and Gilbert S. McClintock, Wilkes-Barre.

F. A. Wyant, has resigned as engineer in charge of construction at the new Warwick mine of the Diamond Coal & Coke Co., of Pittsburgh, at Warwick, Green County, on the Monongahela River near the West Virginia line.

President A. C. Dinkey of the Midvale Steel and Ordnance Co., of which the Cambria Steel Co. is a subsidiary, recently inspected the Cambria operation and reviewed the progress of the work on the coke ovens and byproduct plant. The work has kept thousands of men employed, during an almost general shutdown.

A state charter has recently been issued to **the Hite Coal and Clay Co.**, Lilly, capital $50,000; Martha Hite, Lilly, treasurer; A. P. Hite, Lilly; Thomas Kemp, Dover, Ohio and C. R. Kipitsky, Cleveland, Incorporators.

The Lecoe & Shiffer Coal Co., of Luzerne County, has filed notice of a capital decrease from $40,000 to $20,000.

The Iron Trade Products Co., offices at Pittsburgh, New York and Philadelphia, has been appointed exclusive sales agent for the production of the **Snyder Mine** at Markleton, Somerset County, on the Western Maryland.

The Hillman Coal & Coke Co. has fired 100 ovens at the Isabella plant at Hillcoke, Fayette County, about ten miles up the Monongahela River from Brownsville.

The Lilley Coal Co., a large union operation, located on the Pennsylvania and on the Monongahela River, just below West Brownsville, has resumed operation after being idle since July.

C. H. Diffenderfer, president of the Blair-Parke Coal Co. has returned to his headquarters at Philadelphia after a recent visit to the Fairmont region.

At the annual meeting of the stockholders of the **Altoona Coal and Coke Co.** held in Altoona, the following officers were chosen for the year: Directors, Thomas Newhall, J. M. Skyles, John Lloyd, W. D. Canan, Thomas K. Maher, Julian P. Huff and Walter Maguire. Thomas K. Maher of Cleveland was elected president, John Lloyd, treasurer and Miss Anna Frank, secretary.

WASHINGTON, D. C.

The United States Civil Service Commission will hold an examination for the position of **Associate Electrical Engineer.** Applications on Form 2118 which can be secured from the commission, must reach the Civil Service Commission, Washington, D. C., by Nov. 15, 1921.

Arguments have been heard in the Supreme Court in the case of the **Western Fuel Co.**, which seeks to set aside a verdict of California courts of $9,560 in favor of the heirs of Manuel Garcia who was killed in unloading coal from a vessel in 1916. The coal company puts up the statute of limitations and also invokes admiralty questions.

The Supreme Court has granted a motion to review judgment of Virginia courts in favor of the **Quemahoning Coal Co.**, in a libel case for recovery of value of coal furnished a vessel on order of the charter party.

WEST VIRGINIA

The Canyon Coal & Coke Co., operating in the West Virginia fields, has filed notice of increase in capital from $500,000 to $750,000.

The Jeffrey Manufacturing Co., has established a service station in the Fairmont Hotel, Fairmont.

Clay City reports that a new railroad is to be built from Argyle to Pilot Knob, the plan having the backing of Ashland and Huntington, West Virginia, interests.

Organization of the **Brooke County Coal and Coke Co.** with a capital stock of $430,000, presages the development of coal lands in Brooke County. Wellsburg is to be the headquarters of the Company in which R. L. Ramsey, J. R. Elson, W. S. Wilkins, S. S. Hodges, all of Wellsburg, are interested, together with C. M. Warden of Beech Bottom.

W. D. Boone, of Lookout, well-known in smokeless circles spent a few days in Charleston recently.

In the suit of the state ex rel, **A. L. Black Coal Co.** against the United States Fidelity and Guarantee Co., the Supreme Court of Appeals of West Virginia has handed down a mandate reversing the decision of the circuit court of Monongalia County and remanding the case for a trial in the lower court. This case grew out of an injunction suit brought by George W. Warren of Boston against the Black company, a corporation in which Morgantown men were interested, the suit growing out of an injunction bond of $500. The action was really for the purpose of having the bond dismissed, inasmuch as the injunction had been dissolved. The case was dismissed in the lower court on a demurrer filed by the defendant to the declaration and amended declaration. The case was then appealed to the higher court.

With the completion of work on the Aracoma Mine of the **Lake & Export Coal Corporation** in the Logan field, it has been possible to put that tipple in commission. Plans have been matured for extensive repairs and improvements at the Sunbeam Mine of the corporation and it is understood work will be started on such improvements in the near future.

Huntington is to be the headquarters of the **Block Coal Sales Co.** in which H. D. Hatfield and associates are interested, this company having been formed for the purpose of handling the output of some of the mines in the Logan region. The new company is capitalized at $50,000. Closely identified with the company are H. C. Duncan, Jr., Homer H. Holt, W. K. Cowden, all of Huntington, and Walter Prockter, of Yamacraw, Ky.

A contract has been awarded by the **West Bethlehem Coal Co.** for the erection not only of a tipple but also a power house, as well as for sixty miners dwellings at Corunna, near Oakland on the Western Maryland Ry.

BRITISH COLUMBIA

The property of the **Pacific Coast Coal Co. Ltd.**, consisting of the Morden Mine and considerable undeveloped coal areas on Vancouver Island, would have been put up at tax sale by the Provincial Government on Oct. 12, if the ordinary procedure had been followed. But, had this been done, the claims of coal miners for back wages aggregating $71,326.71, might have been adversely affected. The tax sale, therefore, has been postponed to Dec. 1. Meanwhile it is likely, should there be no settlement in the interim, that an order of the court will be asked for authorizing the sale for the satisfaction of the wages in arrears.

The Aveling Coal Co., Telkwa, is making preparations to take advantage of the growing demand for coal in northern British Columbia. The probelm has been that of transportation. This has been tackled seriously during the past summer and, with the construction of a bridge, now underway, in which the provincial government is lending financial assistance, it is likely that local coal will be available to the people of northern cities and settlements.

ONTARIO

Coal as a strike benefit is something new in Toronto. Hundreds of striking compositors in the printing trades in that city have recently been presented with a ton of coal each from a special strike fund provided by the International Typographical Union.

Affairs of the **Blue Diamond Coal Co.** were gone into rather fully at the recent annual meeting of the owners in Toronto. The financial statement indicated that earnings were now showing up well and in addition to the market in Western Canada there is a promising field for business in supplying bunker coal to ships at the port of Vancouver, while the West Indies also afford a profitable outlet.

F. A. Fish, of the Fish Coal Co., Toronto, and his sales manager, **W. A. Walkover**, have returned to Toronto after a visit of inspection to a number of the Pittsburgh coal properties.

Business visitors and callers on the coal trade in Toronto recently were **C. E. Graves**, of E. L. Hedstrom & Co., Buffalo, and **J. C. Good**, of the National Coal Co., Cleveland.

Traffic News

The Southern Freight Rate Committee have before them the following proposed changes in rates, rules and regulations affecting coal:

Submittal No. 3904—Initiated by Shippers—coal from mines on N.C. & St.L. Ry., to Tallahassee, Fla. Present and proposed rates are: From Bon Air group, present 472; proposed, 419; from Tracy City group, present, 465; proposed, 413 from Whitwell group, present 459 proposed, 407; from Whiteside group, present 453; proposed 400c. per net ton. Proposed rate from Bon Air group is the same as the rate at present applicable from Coal Creek, Tenn., while the proposed rates from Tracy City, Whitwell and Whiteside groups are based 5, 10 and 15c. respectively, less than the rates from Coal Creek, Tenn., as of Aug. 25, 1920, the totals so arrived at increased 25 per cent in accordance with Ex Parte 74.

Submittal No. 3414—Initiated by Shippers—coal from N.C.&St.L. Ry. mines, viz: Bon Air Group, Tracy City group, Whitwell group and Whiteside group to stations on the Northwestern RR. of South Carolina. At the present time, there are no through rates in effect, lowest combination of rates being applicable. It is proposed to establish rates same as at present in effect from L.&N. east Tennessee group, 1 mines as per L&N. Tariff ICC A-14167.

Submittal No. 3502—Initiated by Carrier—coal from mines on the L.&N. and its short line connections in southeastern Kentucy and eastern Tennessee to Pensacola, Fla., Mobile, Ala., New Orleans, La., and Port Chalmette, La., for export, bunkerage purposes and coastwise movement. Present rates are published in L.&N. Tariff ICC No. A-14167. Proposed rates are 25c less than the present rates, but do not include wharfage and handling charges at the ports. The purpose of this revision is to seperate the terminal charges from the transportation rates.

Submittal No. 3530—Initiated by Shippers—coal from mines on the Central of Ga. Ry. in Alabama to Ragland, Ala. No through rates at present in effect, lowest combination of rates being applicable. It is proposed to establish rates of 150c. per net ton. same as the rate at present applicable from Frisco Ry. group 1 Alabama mines to Ragland Ala.

Submittal No. 3583—Initiated by Shippers—coal from Southern Ry. mines to Brunswick, Ga., for transshipment beyond by water. The present rates to Brunswick for transshipment beyond by water are limited to those having destination beyond Brunswick via the Atlantic Ocean. It is proposed to change the present application in Southern Ry. ICC A-8988 so that the rates now applying to Brunswick for export will apply also on shipments moving beyond Brunswick by the inside route to points between Brunswick and Savannah and points between Brunswick and Fernandina, including Savannah and Fernandina.

Submittal No. 3644—Initiated by Shippers—coal from L&N. southeastern Kentucky, eastern Tennessee and Virginia mines to Birmingham, Ala., SAL. Ry. and Sou. Ry. intermediate points. Present rates, various. It is proposed to establish rate of 275c. per net ton to Birmingham, Ala., SAL Ry., stations between Wellington, Ala., and Birmingham, Ala., Southern Ry. stations between Chattanooga, Tenn., and Birmingham Attalla, Alabama City, and Avondale, Ala.—Southern Ry. stations.

Railroads serving the Boulder lignite fields refuse to recognize an order of the Colorado utilities commission, reducing freight rates on coal hauled from the mines, a few miles away, into Boulder. The railroads challenge the right of the state commission to interfere with freight rates.

The I. C. C. has vacated its investigation concerning the lawfulness of the rates, charges, regulations and practices of the **Central Railroad of New Jersey** in the matter of bunker coal charges at Port Liberty coal piers, Jersey City, N. J., the carriers having canceled the schedules effective Sept. 29. The commission had previously suspended the schedules until Jan. 7.

In the complaint of **W. L. Carney** an I. C. C. examiner recommends that the rate on bituminous coal from points in Indiana and Illinois to Chicago during Federal control were not unreasonable.

In the complaint of the **National Supply Co.** an examiner recommends that rates on lump coal from West Clinton, Ind., to Ottumwa, Ia., reconsigned to destinations in Iowa and Nebraska, were not unreasonable.

The I. C. C. has denied application of the Pennsylvania R. R. for re-argument of the complaint of the **Pittsburgh Terminal Railroad & Coal Co.**, in which the commission had found that rates on bituminous coal from points in Pennsylvania on the West Side Belt R.R. to interstate destinations east of Harrisburg were not unreasonable, but that the refusal of the Pennsylvania to maintain joint rates on the Westmoreland group basis from and to the named points, while maintaining this basis from points on the Peters Creek and Ellsworth branches of the Monongahela division on the Pennsylvania and on the Monongahela Ry. was prejudicial.

In order to better shipping facilities, producers in the New River field have asked the management of the Chesapeake & Ohio to move the western end of the Eastern Division of the road from Hinton to Thurmond.

The Terre Haute Paper Co., of Indiana, has complained to the I. C. C. against unreasonable charges on coal from Wabash and Speedwell mines to Terre Haute during Federal control. It also alleges unreasonable rates on coal from mines on the P. C. C. and St. L. in Indiana, and from mines on the Chicago, Terre Haute and Southeastern.

In a complaint to the commission the **Greene Cananea Copper Co.**, of New York, alleges unreasonable rates on coke from Gardiner, and Koehler, N. M., and Segundo, Col., to Cananea, Mexico.

The Pennsylvania Power and Light Co., of Stoughton, Wis., alleges that charges for transportation of anthracite coal from producing points to Haute, Pa., were illegally assessed.

Unreasonable charges on smithing coal from Douglas, W. Va., to Benton, Ill., reconsigned to Tulia, Tex., and thence to Clifton, Ariz., because of demurrage accrued through failure of reconsignment, are alleged in a complaint by the **Romann and Bush Pig Iron and Coke Co.**, of St. Louis.

The Nelton Fuel Co., and others of Leslie, W. Va., allege unreasonable rates on coal from points on the Greenbrier and Eastern to various interstate destinations in the United States and to points in Canada, and requests joint through rates on the New River District basis.

The Central New Jersey Coal Exchange, Inc., has withdrawn its complaint from the I. C. C., which related to rates on anthracite coal from Pennsylvania to New Jersey points.

The complaint of the **Northern West Virginia Coal Operators' Association** will be argued before the commission at Washington on Nov. 21.

The Coal & Coke Committee, trunk line territory, held a public hearing in New York City, Oct. 20, on the proposed revision by the D. L. & W. Ry. of **switching charges on coal and coke in the Buffalo district.**

Association Activities

West Virginia District Coal Associations

There was a large attendance of secretaries representing the various West Virginia district coal associations at a recent meeting held in Washington. This conference was called by E. J. McVann, chief counsel for the West Virginia operators, in the Ohio rate case, Mr. McVann having called the secretaries together for the purpose of stressing the importance of being prepared to go ahead with the case, hearings on which were held in Ohio a few weeks ago. Members of the executive committee of the West Virginia Coal Association were also present.

The meeting was held not only for the purpose of impressing secretaries with the importance of the matter but also to prepare for further hearings and in order to make certain that data in support of the opposition of the West Virginia operators to the application of the southern Ohio operators for an increase in the freight differential would be prepared promptly and accurately. It is claimed by West Virginia operators that any increase or widening in the differential would be ruinous to West Virginia operators so far as Western markets are concerned.

Illinois Coal Operators' Association

The association held its twenty-sixth annual meeting in Chicago recently. Rice Miller of Hillsboro, Ill., was elected president; L. J. Smith of Chicago, vice president; F. C. Honnold of Chicago, secretary-treasurer; and C. E. McLaughlin of Springfield, secretary of the commission and recording secretary. The meeting was attended by approximately one hundred operators.

One very significant fact came out in the annual report read at the meeting. During the last twelve months there were recorded the largest number of mine disputes of any annual period. This restlessness on the part of the miners was considered extremely significant.

During the meeting there was no discussion relative to the new wage scale. This matter will not be taken up until after the first of the year as the present agreement with the United Mine Workers does not expire until March 31, 1922.

Kentucky Retail Coal Dealers' Association

The semi-annual meeting of the dealers was held at Lexington recently.

There were three sessions, presided over by president R. A. Watson. The first session was given over to reports from the secretary, who told of correspondence that had been had with members touching the subject of indiscriminate sales by operators and wholesalers direct to groups of consumers. Also of having made some efforts to develop district meetings in the western part of the state. The second session was given over to reports from county chairmen and a discussion of them. These indicated that competition from group buying has demoralized prices and reduced retail margins to the point where profits are small. The one comforting thing about this is that it will help discourage group buying.

Recent Patents

Jig. Guy H. Elmore, Swarthmore, Pa., 1,387,370. Aug. 9, 1921. Filed Dec. 23, 1919; serial No. 346 812.

Rock Drill. Allen Alford, Waco, Texas, 1,387,447. Aug. 16, 1921. Filed July 28, 1920; serial No. 399 483.

Side-Dump Car. A. M. Gow, Duluth, Minn., 1,387,485. Aug. 16, 1921. Filed April 6, 1921; serial No. 458,929.

Obituary

George Dees, for many years connected with the Peabody Coal Co., and of late years located at Taylorsville, Ill., died recently of heart failure.

The death occurred in Atlantic City recently of **W. Hamilton Smith**, of Washington, D. C., who was nationally known in the coal trade. He was second vice president of the J. Maury Dove Coal Co., of the District of Columbia, which company he had served 45 years. He was also president of the Washington Coal Merchants' Board of Trade, vice president of the Standard Coal Co., and one of the organizers and vice presidents of the National Retail Coal Merchants' Association. He was born in New London, Conn., in 1862 and had lived in Washington since 1874.

Coming Meetings

The National Industrial Traffic League will hold its annual meeting Nov. 9 and 10 at the Sherman Hotel, Chicago, Ill. Executive secretary, J. H. Beek, Conway Building, Chicago, Ill.

The Coal Mining Institute of America will hold its annual meeting at Pittsburgh, Pa., Dec. 7, 8 and 9. Secretary H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

An Industrial Relations Conference for all industries in the State of Pennsylvania has been arranged for October 24 to 27 at Harrisburg ,Pa., by the Commissioner of Labor and Industry, C. D. Connelly.

American Gas Association. Annual convention Nov. 7 to 12 at Congress and Auditorium Hotels, Chicago, Ill. Secretary, O. H. Fogg, 130 E. 15th St., New York City.

The Illinois Mining Institute will hold its fall meeting in the City Hall, Springfield, Ill., Saturday, Nov. 19. Secretary, Martin Bolt, Springfield, Ill.